CURRICULUM DOCUMENTS

INFORMATICS ENGINEERING D4 STUDY PROGRAM



JURUSAN TEKNOLOGI INFORMASI POLITEKNIK NEGERI MALANG 2021





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CHAPTER I STUDY PROGRAM IDENTITY

Study Program (PS)	:	D4 Informatics Engineering
Department/Department	:	Information Technology
Faculty	:	-
College	:	Malang State Polytechnic
PS establishment decree	:	SK DIKTI NO 50/D/O/2010
number (*)		
PS establishment decree date	:	May 21, 2010
The Signing Officer of the	:	Minister of National Education ANB.
Decree on the Establishment of		Director General of Higher Education
PS		
Month & Year Started	:	May 2010
SK Number for Operational	:	50/D/O/2010
Permit (*)		
Operational Permit Decree	:	May 21, 2010
Date		
Final Accreditation Score	:	В
SK BAN-PT number	:	1810/SK/BAN-PT/AkRED/Dipl-
		IV/VII/2018
PS address	:	Jalan Soekarno-Hatta No.9 Malang 65141
		Po Box 04 Malang
No. PS Phone	;	+62 (0341) 404424 - 404425
No. Facsimile PS	:	+62 (0341) 404420
Homepage and Email PS	:	http://jti.polinema.ac.id
		D4ti@polinema.ac.id
Educational level	:	Diploma IV
Graduate Degree	:	S.ST





1.1 Vision, Mission, and Objectives of the Information Technology Department

1.1.1 Vision

The POLLINEMA Information Technology Department is a center of excellence in the field of information technology and software engineering at the national and international levels.

1.1.2 Mission

- a. Implementing innovative vocational education based on an applied education system by utilizing advances in information and telecommunications technology, so as to produce graduates who are ready to work with global competitiveness.
- b. Carry out applied research based on products and services in the field of informatics.
- c. Carry out community service by using advances in information technology to improve welfare.
- d. Realizing mutually beneficial cooperation with various parties both inside and outside the country in the field of information technology.

1.1.3 Purpose

- a. To produce graduates in the field of information technology and software engineering who are godly, ethical and moral, knowledgeable and highly skilled, ready to work and/or entrepreneurs who are able to compete on a global scale;
- b. Producing applied research in the field of information technology and software engineering on an international scale, increasing effectiveness, efficiency and productivity in the world of business and industry, and leading to the attainment of Intellectual Property Rights (IPR), obtaining patents and public welfare;
- c. Producing community service that is carried out through the application and dissemination of science and technology and the provision of professional services in the field of information technology and software engineering so that it is directly beneficial in improving people's welfare;
- d. Realization of mutually beneficial cooperation with various parties both inside and outside the country in the field of information technology to increase competitiveness.





1.2 Informatics Engineering DIV Study Program

1.2.1 Vision

Becoming an excellent study program in the field of software engineering at both national and international levels.

1.2.1 Mission

- a. Implementing innovative vocational education based on an applied education system by utilizing technological advances, so as to produce graduates who have competence in the field of software engineering and are ready to compete at the national and global levels.
- b. Carry out applied research based on products and services in the field of software engineering.
- c. Carry out community service using advances in software engineering to improve welfare.
- d. Realizing mutually beneficial cooperation with various parties both inside and outside the country in the field of software engineering

1.2.2 Purpose

- a. Producing graduates in the field of software engineering who are godly, ethical and moral, knowledgeable and highly skilled, ready to work and/or entrepreneurs who are able to compete on a national and global scale.
- b. Producing applied research in the field of software engineering on a national and international scale, increasing effectiveness, efficiency and productivity in the business and industrial world, and leading to the attainment of Intellectual Property Rights (IPR), obtaining patents and public welfare.
- c. Producing community service that is carried out through the application and dissemination of science and technology and the provision of professional services in the field of software engineering so that it is directly beneficial in improving people's welfare.
- d. Realization of mutually beneficial cooperation with various parties both inside and outside the country in the field of software engineering to increase competitiveness.





CHAPTER II

CURRICULUM EVALUATION AND STUDY TRACER

2.1 Curriculum Evaluation

The D4 Informatics Engineering Study Program has conducted curriculum reviews and evaluations held by alumni of the Informatics Engineering D4 Study Program who have worked in various industries, both telecommunications, IT and other industries. In addition, the D4 Informatics Engineering Study Program also invited several industry parties who employed alumni. Informatics Engineering D4 Study Program has held several Group Discussion Forums with related parties. In this meeting conclusions were reached in the form of evaluation points and recommendations for curriculum development, among others

2.1.1. Suggestions and Feedback regarding graduate profiles

Most of the current graduate profiles cover current industry needs. There are several additions / jobdesk that have not been included in the graduate profile. Among others:

- a. What is trending and much needed, Quality Assurance or tester. Both manual and automatic testers.
- b. Technical Writer
- c. Systems Analyst
- d. Some companies are starting to need data integrators, maintain ITL processes, process all company data displayed on a dashboard
- e. System implementer, product implementation from the client
- f. DevOps Engineer, setting up infrastructure, starting cloud servers, scripts for automation. Like IT Support, but DevOps support Engineer.
- g. ERP background, paid or open source ERP, setup several modules.

There are many new things that can be adapted, from developments in the industrial world, including:

a. Cloud service : AWS, Alibaba, devOps will be needed in the future





- b. Data Integration, which data engineers can teach (how to process data, and make goals from data)
- c. QA, the scope can be broad, for example Tester Engineer.
- d. Business Analyst: can discuss with the client to get the requirements from the client
- e. Scrummaster: collaboration

There are a number of things that need to be updated, for example data engineering is it entered into the DB administrator. At this time, data engineering is needed quite a lot, so it can be introduced, such as the ETL concept using Spark because this is quite important. For databases, it is necessary to introduce NoSQL. For Information System Engineers it is appropriate, what needs to be conveyed is best practice in engineering such as TDD and Design Patterns. The existing curriculum has reached PBO, but it needs to add several patterns used in the world of work, such as the visit pattern. While IT technical support: do not omit basic material, because it is still needed, for example communication between servers. What needs to be added is cloud service technologies.

Informatics Engineering graduates produce more software engineers (hard skills), while Information Systems produce more graduates towards business analysts, closely related to project managers. Analyzing user needs, discussing with users, working with research teams, UI/UX and developers regarding user needs. How to build a business, analyze requirements, and master software engineering too.

2.1.2 Suggestions and Feedback based on the Lecturer Questionnaire

The following is a summary of the curriculum evaluation questionnaire that has been distributed to lecturers of the Department of Information Technology, State Polytechnic of Malang. The total number of participants who filled out the questionnaire was 21 *participants*.





2.1.2.1 Profile of graduates from the Informatics Engineering D-IV Study Program

Profil Iulusan		
Software Engineer:	21	
Database Administrator:	21	
Web Engineer / Web	19	
Developer Game:	18	
Network Engineer/ Data	17	
IT Entrepreneur: membangun	17	
System Programmer:	17	
IT Technical	14	
Software Tester: mengevaluas	13	
Intelligence System Developer	12	
IT Project Manager :Buat	10	

Description for each graduate profile:

Software Engineer

Apply a systematic approach to software development, operation and maintenance

Database Administrators

Make a database design, implement the design and perform installation Configuration, upgrade, adaptation, monitoring and maintenance of databases in an organization

Web Engineer / Web Administrator

Plan, develop and maintain the website.

Game Developers

Develop multimedia game software.

Network Engineer/ Data Communication Engineer

Designing computer network architecture, including maintenance and management in companies or organizations.

IT Entrepreneur





Building and developing computer technology-based independent businesses that have an impact on welfare for the community.

System Programmer

Analyze, design, develop and implement software solutions on mobile and Web platforms.

IT Technical Support

Perform administration, repair and maintenance of IT equipment and infrastructure both in software and hardware.

Software Testers

Evaluate and ensure that the software runs correctly as specified.

Intelligence Systems Developer

Develop a system that can carry out learning and reasoning based on knowledge

that is appropriate to the problem at hand (intelligent system)

IT Project Manager

Create plans and processes to monitor project progress, manage the team.

Additional suggestions from lecturers	
Network Security Administrator: Analyze network security threats both from within and outside the range and develop the necessary security policies according to the applicable security policies	1
Information system project organizational structure: type of IS project	1
Palugada Developer (games, web, Machine Learning)	1
UX designer/researcher, QA engineer	1





2.1.2.2 Capabilities/Competencies/Learning Achievements that must be owned by graduates of the Informatics Engineering Study Program

Chart Title		
Pengembangan aplikasi mobile dan layan	20	
Kemampuan membuat perangkat lunak	19	
Teknik-teknik pemrograman komputer,	18	
Mampu mendesain, membuat, dan	18	
Pengembangan game (skenario, algoritm	17	
Technopreneurship.	17	
Mampu membuat program berbasis wEB	17	
Mampu mengimplementasikan mengelol	16	
Mampu membuat program komputer	14	
Full stack developer di bidang mobile/we	14	
Mampu menggunakan aplikasi perkantor	11	

Development of mobile applications and web-based services.	
Ability to create software to solve problems.	
Computer programming techniques, computer systems, computer network systems.	
Able to design, create, and manage databases.	18
Game development (scenarios, programming algorithms, graphics, multimedia).	17
Technopreneurship.	17
Able to make web-based programs well.	17
Able to implement managing computer networks.	
Able to make computer programs well.	
Full stack developer in the field of mobile/web programming.	
Able to use simple or complex office applications.	11





2.1.2.3 Courses that need to be added to the D-IV Informatics Engineering study program

As many as 12 lecturers chose that it was necessary to add new courses to the D-IV Informatics Engineering study program.

a. Courses that need to be added:

Course Name	Number of Proposers
Multimedia Coding / Multimedia Coding	1
Devops	1
Cryptography	1
Algorithmic Analysis Design	1
cybersecurity and Blockchain	1
IT Infrastructure Design	1
Advanced Mobile Programming	3
Computer network management	2
Modern database management (nosql, master-slave, replication)	1
Web Front End, Web Back End, Ui and UX	2
Computer network management and security	1
Git Material on Documentation Engineering MK	1

2.1.2.4 Subjects that are irrelevant so that they need to be deleted / reduced / merged from the D-IV Informatics Engineering study program?

As many as 10 lecturers chose that there were courses that needed to be removed/reduced

Courses that need to be removed	Courses that need to be combined
Database Management System	Database Management System combined with BDL (advanced database)





Introduction to Information	cognitive computing can be merged into
Technology	artificial intelligence
Project	Thesis Proposal + Research Methodology =
1.00000	Descende Methodalogy
	Research Methodology
Project	Project $1 + Project 2 + Project 3 - Project$
110jeet	110jeet 1 + 110jeet 2 + 110jeet 5 - 110jeet
documentation technique	Advanced Detabase + SMPD - Advanced
documentation technique	Auvanceu Database + SwibD – Auvanceu
	Database (discusses functions, triggers, db
	administration)
Web framework programming	Multimedia computing replaced virtual
	reality
E-business	The research methodology is combined
	with the thesis proposal
	in the meets proposal
capita selecta	Merged project into one subject
1	
multimedia computing	
manneau companing	
Office computer applications	
Communication and	
organizational science	

• Are there any courses that need to be renamed:

71.4% no, 28.6% yes

Name of course that needs to be changed:

Previous course name	Name change suggestion
Multimedia Computing	Games Programming
Data technology	Data Science
Cognitive computing	Machine Learning
Artificial intelligence	Applied artificial intelligence (Applied AI)
Operating system	Operating System Administration (focus on administration and scripting/automation)
Web Design and Programming	BasicWebProgramming(focus on html, js, css and web design and preferably taught in semester 2 the output is in the form of web template design)





Interface Design	UI/UX
	material is more towards Human and
	Computer Interaction (IMK)
Operating system	Become practicum and contain
	administration, no longer theory
Object based programming	Object oriented programming
Web course series	Web programming

• Are elective courses required:

66.7% Yes, 33.3% No

Elective course suggestions:

• On trend	• Network	Several Skills
	Programming	Courses
• Internet of things	• Software Testing	• multimedia computing
• Data Warehouses	 Network Penetration Testing 	• Games programming
• Distributed system	• Games	• SPK
 Data Technology 	• IoT	• Students are free to choose the school according to their wishes
• Cloud Computing	• Design Pattern	• Datamining
• Net security	 Advanced 3D modelling 	• Web frameworks
• courses that are t	ypical of each field, for example	mple DSS, digital image
processing, IoT,	data warehouse, distributed	systems, network
management, gan	ne programming	

• Do you need concentration (specialization):

95.2% Yes, 4.8% No

Required concentration:





Jika Anda menjawab YA, konsentrasi apa saja yang perlu ada pada Program Studi D-IV Teknik Informatika? *Bisa memilih/ mengisi lebih dari satu 21 responses



2.1.2. 5 Suggestions and input from lecturers

- 1) Regular discussions for curriculum development
- 2) If there is a specialization, it should be viewed and determined holistically (tendency of student scores in certain fields of study, filling in student specialization forms, specialization tests)
- 3) It is necessary to analyze the learning outcomes of each MK
- 4) Overall is good, only the implementation needs to be improved
- 5) It's good, maybe the learning method just needs to adjust to conditions during a pandemic
- 6) There is a need for concentration (specialization) in the curriculum and adding elective courses according to specialization
- It's good, but the curriculum must always be updated according to industry demands
- 8) Please include the curriculum reference used and the curriculum development standards currently being implemented. Thank You.
- Project deleted/merged/downsized. Network management mat kil can be replaced. So that there are more network portions and more support for IoT subjects.
- 10) The vocational education curriculum needs to be directed not only to be academic in nature but must be towards efforts to create competencies/skills for each graduate by providing various competency/expertise certifications, so that graduates from vocational education have added value not only on the





academic side (diploma) but are also equipped with certification. various kinds of competencies so that they are ready to work and can be directly absorbed by industrial needs. As input, this can be done one way by focusing on each skillbased course (practicum) to provide output in the form of a competency certification exam in accordance with each subject area. so that after graduating from vocational education, students not only have degrees (diplomas) but are also equipped with various competency certifications that can be obtained in accordance with skill-based courses that have been taken during the 4-year study period.

- 11) It's already good, please adjust the curriculum to the development of the Industrial Revolution 4.0 / Information technology era
- 12) In my opinion, in general the D-IV TI curriculum is good, it's just that students in the mid to late semester should be given the option to study only one concentration, so that each student has the skills that are truly mastered. Because DU/DI are currently more likely to recruit specialists than generalists.
- 13) It is necessary to do mapping and specialization in subjects, so that students will be more focused on studying the subjects they are interested in so that they have more abilities in this specialization. Compared to having to learn many things but lacking in depth and focus.
- 14) According to Pak Ludfi's suggestion, we take the D4 curriculum in a structured model with regular courses.
- 15) In the first semester, the courses should be more technical, maybe around 70%.
- 16) In reviewing the curriculum design, it might be possible to involve or share with industry.
- 17) Occasionally seminars are held by inviting people from the industry so that students have additional views about the industrial world
- 18) Please involve the industry to review the curriculum design
- 19) Courses in the early semester should have a technical percentage of more than 70% so as to prevent students from making the wrong majors
- 20) If possible, lectures/seminars from industry practitioners can be held so that there are additional perspectives from the industry
- 21) Overview of the changed curriculum





https://drive.google.com/file/d/1b5FIWVeLdcI792pMVod3z4Tdv3isD1N2/vi ew?usp=sharin

- 22) Reference for determining the roadmap as a developer https://roadmap.sh/
- 23) Lecturers must master the latest technology
- 24) Need improvement by seeing the needs
- 25) There is a business incubator for students after they have graduated and are waiting for graduation, so that students are better prepared to enter the world of work
- 26) There is a concentration of fields, so students can choose their own field of focus. Semesters 1 to 4 students get basic courses that they must take as a knowledge base, in semester 5 there are courses that can 'take' them to the concentration they will choose. then in semesters 6 and 7 students can determine their own 'way of life' by taking certain concentrations and elective courses, but of course in that semester there are also compulsory courses.

2.1.3 Suggestions and Feedback based on FGD with Industry

Today, Friday, December 4 2020, a Focus Group Discussion (FGD) was held to obtain input from the industry on the D4 Informatics Engineering Study Program curriculum, presenting speakers:

Name	: Martin Fatnuriyah
Industry	: The Edge Property, Pte. Ltd
Position	: Technical Director

In this meeting conclusions were reached in the form of evaluation points and recommendations for curriculum development, including:

- a. The talents at The Edge Property are divided into several positions: front end developer, back end developer. Quality assurance, data engineer, and full stack developer.
- b. There are 3 Polinema graduates who occupy team lead positions because they have advantages in terms of hard skills and soft skills, which initially departed from fresh graduates.
- c. There are several stages of selection, all of which are carried out online:
 - 1) Initial interview: exploring the experience and skills mastered





- 2) Online assessment to find out the ability of algorithms, analytics, and see how someone determines priorities when there are several tasks that come together.
- 3) Project assessment, giving a project according to the position applied for
- 4) Final interview: the final interview to see how someone handles the hardest thing they've ever faced, time management, and project management.
- d. Today's data engineers are different from DB administrators, so they don't only manage databases, but know how to do data processing, data representation, and data visualization so that they can be used for further data analytics.
- e. The profile that is still not covered at universities is a graduate for a Quality Assurance position, someone whose job is to determine whether a product can be released or not based on a test plan.
- f. Technologies currently used at The Edge Property:
 - 1) Backend: node js, python, mico service technology, and PHP Laravel.
 - 2) Front end: angular js, next js, native javascript and jquery.
 - 3) Fullstack: expected to have backend and front end capabilities.
 - 4) Databases: MySql and NoSql
- g. After going through the selection process and being accepted, there is an on boarding process which is a process of adjusting to the working environment for 2 weeks. In the on boarding process, new engineers will be given project documentation to explore, and also given light tasks for the introduction process.
- h. The section that develops mobile apps is called the mobile engineer, divided into mobile apps that use native Android, iOS use Swift, and mobile apps that use React Native.
- i. There are no specific requirements for the D3 or D4 level, the priority is ability. For Information Systems graduates, the target is to later be able to enter the product team, which will prepare business process flows and planning. The product team is divided into several positions: UI/UX which is tasked with translating user needs from the product owner and visualizing them into a design.
- j. One of the drawbacks is communication problems, due to lack of confidence when communicating with other divisions and speaking in English, and sometimes being reluctant to refuse assignments given.





k. Soft skills that must be prepared are: communication skills, presentation skills, and leadership skills.

2.2 Tracer Study of D4 Informatics Engineering Alumni

Tracer study is an activity carried out to find out the profile of graduates of the D4 Informatics Engineering study program who have completed their studies or have been declared graduated. This tracer study data is data from alumni of D4 Informatics Engineering Study Program taken for the last 3 years, namely graduates from 2017 to 2019. The total number of *participants* was 199 *participants* from alumni of D4 Informatics Engineering Study Program. Data obtained from *the Job Arrangement System*, survey method, by conducting interviews and sending alumni performance questionnaires by telephone, by postal mail, e-mail, study program websites, Social Networking, Chatting, Telephone and questionnaires *brought* by students during practical work at companies from 2017/2018 to 2019/2020.

The following is the result of tracer study data analysis that has been carried out:

- The waiting time for alumni to get a job is that 36% got a job before graduating,
 9% less than 1 month, 23% 1 to 6 months, and the rest more than 6 months.
- 2. The average salary earned each month is around less than 2 million and not more than 4 million rupiah.
- 3. Placement of alumni who work in accordance with the IT field is 55.91%.
- 4. The advantage of graduates of the D4 Informatics Engineering study program is 80% analytical ability.
- 5. The advantages of graduates in terms of soft skills consist of 5 aspects, namely norms, integrity, discipline, responsibility, and efficiency.
- Only 1.01% of alumni/graduates stated that their weaknesses were in areas of expertise based on knowledge, English, communication, and a willingness to continue learning.

Wanita
 Pría

2. 3 Tracer Study Results of Graduates from 2017/2018 to 2019/2020.

JENIS KELAMIN ALUMNI







RATA-RATA GAJI BULANAN ALUMNI



Figure 2 Percentage of Average Monthly Salary of Alumni





LAMA WAKTU TUNGGU ALUMNI



Figure 3 Percentage of alumni waiting time

JABATAN ALUMNI SAAT PERTAMA KALI DIERIMA DI TEMPAT KERJA



Figure 4 Position Percentage of alumni when they first started working







Gambar SEQ Gambar * ARABIC 5 Jenis perusahaan tempat bekerja alumi 20 BESAR PERUSAHAAN TEMPAT BEKERJA ALUMNI

PERINGKAT KE-	NAMA PERUSAHAAN	JUMLAH ALUMNI
	Dinas Komunikasi dan Informasi	6
1	PT. IndosatTbk	4
1	IDN Media	3
	Politeknik Negeri Malang	3
5	PT Pelabuhan Indonesia III (Persero)	3
i .	PT. Astra Daihatsu Motor	3
,	PT. BANK BRI	3
8	Rumah Sakit Umum Daerah	3
•	United Tractors Tbk	3
10	Universitas Brawijaya Malang	3
ia.	Wiraswasta	3
12	SMK	3
3	Champion Motor	2
4	Dinas Kependudukan dan Pencatatan Sipil	2
5	Followers Indo	2
16	Kampus Akademi Keperawatan	2
7	PT Infosys Solusi Terpadu	2
.8	PT Petrokimia Gresik	1
-9	PT. IDN MEDIA NUSANTARA	2
10	PT. Pos Indonesia (Persero)	3

Figure 6 Top 20 companies where alumni work







Figure 7 Percentage of degree conformity with alumni's field of work

DEPARTEMEN TEMPAT ALUMNI BEKERJA



Figure 8 Department where alumni work





PENEMPATAN JABATAN DI TEMPAT ALUMNI BEKERJA



Figure 9 Placement of positions where alumni work



ASPEK KEUNGGULAN LULUSAN HARDSKILL

Figure 10 Aspects of alumni hard skills advantage







ASPEK KEUNGGULAN LULUSAN SOFTSKILL





ASPEK KEUNGGULAN LULUSAN KEMAMPUAN BAHASA INGGRIS

Figure 12 Aspects of excellence in alumni's English skills





ASPEK KELEMAHAN LULUSAN



Figure 13 Aspects of alumni soft skills weaknesses





CHAPTER III FOUNDATION OF DESIGN AND CURRICULUM DEVELOPMENT

3.1 Philosophical Basis

Learning is the core of the curriculum while the curriculum is the core of education, in other words the operationalization of education and curriculum is in learning activities. Education requires a curriculum and learning that is able to prepare the future of a nation, not only able to survive in order to continue to exist, but must be able to take a dignified role in various dimensions of life both at the national and international levels. In essence, education and curriculum require learning efforts that position professional educators in facilitating the learning process for students (not teaching).



Figure 14 Learning Position in Educational Context

The main goal of education, curriculum and learning is the optimization of human potential. Paulo Freire, an Education Democracy figure, views that humans are in a process, which means that humans are not finished (not yet complete). Then how to form a complete human being. The desired human is a human who is autonomous towards himself, free from pressure and has a clear basis of life and reality. On the other hand, in Freire's view, humanization is an ideal description. The ideal is obtains human man that man wholeness. The wholeness that is obtained to become an ideal human being





(humanization) requires a human being who is self-aware. The existence of awareness in humans is obtained by freedom (Freire, 2001).

The Implementation of Free Learning (Nadiem, 2019) is in line with the philosophy of

Educational Democracy (Freire, 2001). In its activities involved interactions between students with a number of learning resources. Lecturers as educators also play role source of learning а as a and students as students, are essentially no different, both are in a dynamic process of "to become" (on becoming). Lecturers as а source of learning means that there are many other learning resources that students can choose from and consequently lecturers have an obligation to provide flexibility to students in determining the choice of other sources as well as ways and places of learning that suit their interests. This was emphasized by Freire that " The purpose of adult education is help them learn, to to not to teach them all you know and thus stop them from learning ".

- a. The philosophical assumption that needs to be developed in this context is that learning is a process of thinking to seek and find (not to be taught). The implementation of the learning process is directed at;
 (1) Formation of certain mental skills (*Teaching of thinking*) such as critical thinking skills, creative thinking.
- b. Efforts to create a learning environment that can encourage cognitive development, such as creating an atmosphere of democratic openness, creating pleasant climate teaching for а (thinking).
- c. Efforts help students become of to more aware their thinking processes (teaching about thinking). Therefore, the mind and intelligence of students must be well developed. Because educational institutions do not function to transfer knowledge transfer (of knowledge), but also function as transfer of value (transfer of value), so that students become skilled, intellectually good, and have internalized values in the form of character. They must be given the freedom act in accordance with their to





respective ways and abilities in an effort to increase their intelligence and creativity based on standard values.

3.2 Sociological Basis

Sociologically, education is rooted in national culture to build the present and future life of the nation. In line with this view, the curriculum is developed based on the diverse cultures of the Indonesian nation, directed to build present life, and to build the foundation for a better nation's life in the future. The curriculum should be believed to be an educational plan to prepare the life of the nation's young generation. The sociological basis for curriculum development for the Informatics Engineering DIV Education study program has the following foundations:

- a. The curriculum is able to respond to social changes from the development of society which is influenced by the philosophy of life, values, science and technology, and the needs that exist in society. The development of society demands the availability of relevant educational processes.
- b. The curriculum is composed of a progressive system that includes the quality of education in the context of input, process, output and outcome in order to create students who are skilled, productive, loyal and adaptive.
- c. 21st century skills as the demands of the international environment that have a shared vision to improve literacy, numeracy, scientific literacy, ICT literacy, financial literacy, cultural and civic literacy skills.
- d. Learners have the freedom to develop themselves by enriching their competencies through new learning experiences with various practical environments in a structured and systematic way. This program is embodied in the Merdeka Learning Campus Merdeka (MBKM) curriculum of the Informatics Engineering DIV study program

3.3 Psychological Basis

The Freedom to Learn Policy is temporarily used as the right solution in order to create an autonomous and flexible learning process in tertiary institutions so as to create a learning culture that is innovative, not restrictive, and in accordance with the needs of students. This policy also aims to increase links and matches with the





business world and the industrial world, as well as to prepare students for the world of work from the start. However Nadiem (2020) confirms that; "Through the Merdeka Learning - Merdeka Campus policy, higher education institutions are required to design and implement innovative learning processes so that students can achieve optimal learning outcomes.

Students are given the freedom to take learning credits outside the study program for three semesters, which can be taken from outside the study program in one

tertiary institution (PT) and/or outside PT. This means that learning outcomes as a whole

are the orientation of this policy. Anticipating the failures that occurred in previous policies, Freedom Learning is based on the Strengthening Character Education (PPK) policy as stipulated in the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 20 of 2020 concerning Strengthening Character Education in Formal Education Units.

Strengthening Character Education is mandatory for Merdeka Melajar in anticipation of the failure of the link and match policy in the past. this policy emphasizing the six characters that must be the basis of learning; 1) computational thinking, 2) creative, 3) critical thinking, 4) collaboration, 5) communication, and 6) compassion.

Strengthening character education is carried out based on local wisdom as a strategy to revitalize Pancasila values to strengthen national character and identity based on: (a) integration of local cultural wisdom originating from the core values of respect, harmony, and mutual help as a value revitalization strategy - Pancasila values and character values, (b) to prepare students as smart and good citizens, learning is done by learning by doing, learning to solve social problems, learning through social engagement, and learning through habituation and socio-cultural interaction, (c) Implementation of the learning model developed in the independent campus curriculum is carried out using the Problem Based Learning, Project Based Learning, and Value Clarification learning approaches





3.4 Juridical Basis

Merdeka Learning is one of the government's strategic efforts related to the education sector. A number of policies under its umbrella are 1. The 1945 Constitution of the Republic of Indonesia CHAPTER XIII Article 31 (1) Every citizen has the right to education. Each of the main points of the Merdeka Campus policy has been strengthened by the Minister of Education Regulation (Permendikbud) as the legal basis. The legal basis for the Merdeka Campus Program is as follows:



Figure 15 Legal Basis for Curriculum Development

- The 1945 Constitution of the Republic of Indonesia CHAPTER XIII Article 31

 (1) Every citizen has the right to education.
- Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards Chapter I Article 3 concerning standards of learning content:
 - a. The National Standards for Higher Education aim to ensure the achievement of Higher Education goals which play a strategic role in educating the nation's life, advancing science and technology by applying humanities values as well as cultivating and empowering the Indonesian people in a sustainable manner.
 - b. Ensure that Learning in Study Programs, research, and Community Service organized by





Higher Education Institutions in all jurisdictions of the Unitary State of theRepublicofIndonesiaachieves quality in accordance with the criteria set out in the NationalHigher Education Standards;

- c. Encouraging Higher Education in all jurisdictions of the Unitary State of the Republic of Indonesia to achieve the quality of Learning, Research and Community Service beyond the criteria stipulated in the National Higher Education Standards in a sustainable manner. 4. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 20 of 2018 concerning Strengthening Character Education in Formal Education Units article 1 (1) Strengthening Character Education, hereinafter abbreviated as PPK, is an educational movement under the responsibility of an education unit to strengthen the character of students through harmonization of the heart. , exercise of taste, exercise of thought, with sports with involvement with cooperation between educational units, families, and the community as part of the National Mental Revolution Movement (GNRM).
- 3) Law Number 12 of 2012, concerning Higher Education.
 - a. A national education system that increases faith, piety to God Almighty, and noble character in order to educate the nation's life and advance science and technology by upholding religious values and national unity for the advancement of civilization and the welfare of mankind
 - b. Higher education as part of the national education system has a strategic role in educating the nation's life and advancing science and technology by paying attention to and applying humanities values as well as cultivating and empowering the Indonesian people in a sustainable manner.
 - c. Higher education capable of developing science and technology as well as producing intellectuals, scientists and/or professionals who are cultured and creative, tolerant, democratic, have strong character, and dare to defend the truth for the benefit of the nation





- d. Higher education that is of good quality and relevant to the interests of the community for progress, independence and prosperity requires a planned, directed and sustainable arrangement of higher education by taking into account demographic and geographical aspects
- 4) Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 7 of 2020 Concerning the Establishment, Change, Dissolution of State Universities, and the Establishment, Amendment, Revocation of Licenses for Private Universities
- Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 5 of 2020 concerning Accreditation of Study Programs and Higher Education
- Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 Article 11 concerning standard learning processes;
 - a. The characteristics of the learning process as referred to in Article 10 paragraph (2) letter a consist of interactive, holistic, integrative, scientific, contextual, thematic, effective, collaborative, and student-centered characteristics.
 - b. Interactive as referred to in paragraph (1) states that graduate learning outcomes are achieved by prioritizing a two-way interaction process between students and lecturers
- c. Holistic as referred to in paragraph (1) states that the Learning process encourages the formation of a comprehensive and broad mindset by internalizing local and national excellence and wisdom. (4) Integrative as referred to in paragraph (1) states that graduate learning outcomes are achieved through an integrated learning process to fulfill graduate learning outcomes as a whole in one program unit through an interdisciplinary and multidisciplinary approach.





- d. Scientific as referred to in paragraph (1) states that graduate learning outcomes are achieved through a learning process that prioritizes a scientific approach so as to create an academic environment that is based on a system of values, norms and principles of science and upholds religious and national values.
- e. Contextual referred to in paragraph (1) states that the learning outcomes of graduates are achieved through a learning process that is adapted to the demands of the ability to solve problems in the realm of expertise.
- f. The thematic referred to in paragraph (1) states that graduate learning outcomes are achieved through a learning process that is adapted to the scientific characteristics of the Study Program and linked to real problems through a transdisciplinary approach.
- g. Effective as referred to in paragraph (1) states that the learning outcomes of graduates are achieved effectively by prioritizing the internalization of the material properly and correctly within the optimum period of time.
- h. Collaborative as referred to in paragraph (1) states that graduate learning outcomes are achieved through a joint learning process that involves interaction between individual learners to produce capitalization of attitudes, knowledge and skills.
- i. Student-centered as referred to in paragraph (1) states that graduate learning outcomes are achieved through a learning process that prioritizes developing creativity, capacity, personality and student needs, as well as developing independence in seeking and finding knowledge





CHAPTER IV

GRADUATE COMPETENCE STANDARD

4.1 Graduate Profile

4.1.1 IT Project Manager

Graduate profile competencies in this field are:

- a. Graduates are able to adapt project completion to traditional (waterfall) or Agile frameworks/tools
- b. Graduates are able to estimate the time (timing) in the project plans made.
- c. Graduates have the ability to direct and motivate project team members Graduates have negotiation, problem solving communication, and interpersonal skills
- d. Graduates implement strategy and industry knowledge Graduates have good communication skills with all parties involved in projects such as clients, vendors, and team members
- e. Graduates are able to predict problems that may arise and their solutions, have alternative or backup plans when encountering problems (problem solving)
- f. Graduates have knowledge of project cost analysis
- g. Graduates have the ability to identify, plan and manage project risks
- h. Graduates understand project management methods

4.1.2 IT Team Leader

Graduate profile competencies in this field are:

- a. Graduates have the ability to coordinate and delegate IT team responsibilities
- b. Graduates can inspire teams with open, honest, and transparent discussions focused on technology strategy and vision
- c. Graduates have knowledge and experience in projects that are carried out, related to methods, tools, and software
- d. Graduates have the ability to determine project work time, report results, and how a problem must be resolved




- e. Graduates have good communication skills with all parties involved in the project
- f. Graduates are able to translate the business process of a project to be implemented into applications (software)
- g. Graduates have technical skills which include tools, programming languages, and databases used when developing a project
- h. Graduates are able to provide solutions to technical / non-technical problems related to projects faced by their team members Graduates have the ability to think critically
- i. Graduates have the ability to bridge the needs between product teams and development teams
- j. Graduates are able to analyze specifications and requests from product teams
- k. Graduates are able to explain technically the tasks that need to be carried out by the Backend Engineer, Frontend Engineer and Quality Assurance teams to continue the project according to the expectations of the product team
- 1. Graduates have the ability and understanding in terms of coding Graduates have the ability in the field of system architecture
- m. Graduates have an understanding of the structure of the data base
- n. Graduates have insight into the tech stack that can be applied to bring projects according to the desired requirements

4.1.3 Programmers (Web, Desktop, Mobile, Multimedia)

- a. Graduates have the ability to write software programs
- B. Graduates have the ability to transform program designs created by software designers/engineers/system analysts into instructions that can be executed by computers
- c. Graduates can read the source code (program code) of an application that will be/is being developed Graduates have the ability to find bugs or errors from a program that has been made before
- d. Graduates have the ability to read documentation which functions to get to know each code of each programming language used to create programs
- e. Graduates have the ability to learn several programming languages





- f. Graduates have multitasking abilities in terms of integrating various layers of technology
- g. Graduates have good English skills to be able to understand error messages, read documentation, ask questions on global forums and search from the English-speaking web
- h. Graduates are able to learn concepts and apply them to other problems
- i. Graduates have an understanding of algebra and arithmetic
- j. Graduates have the ability to identify problems and find the most efficient ways to solve them through programming
- k. Graduates have good communication skills
- Graduates are able to work together in a team Graduates have a plan in designing the program structure so that typing the first line of code can be successful
- m. Graduates have a willingness to continue learning about new things

4.1.4 System Analyst

- n. Graduates have knowledge of common operating systems, programming languages and hardware platforms
- o. Graduates have knowledge of Business process mapping, Software development, and Project management
- p. Graduates have the ability to identify problems, consider solutions, implement plans and evaluate existing improvements
- q. Graduates are able to communicate technical information so that clients can understand it Graduates have the ability to analyze product choices and find system innovations that are also the most economical for companies or what kind of security is right and can protect company data
- r. Graduates are able to outline a plan of how the product will look like and ensure all the details of the plan and the different stages are executed to perfection
- Graduates are able to Master System Development Methodology Graduates are able to predict external factors such as rising device prices or the emergence of competitors





- t. Graduates master the latest software and hardware, and know the advantages and limitations of these technologies Graduates have expertise in communication or interpersonal skills
- u. Graduates have knowledge and skills in computer technology, programming languages and data processing techniques
- v. Graduates have knowledge of quantitative methods such as linear programming, dynamic programming, regression, network, decision tree, trend, and simulation
- w. Graduates have the ability to analyze problems and provide solutions Graduates have communication skills (verbal and written) and the ability to build and maintain relationships

4.2 Graduate Learning Outcomes

4.2.1 Attitude Aspect

Code	Achievement of Attitude Learning
S1	Fear of God Almighty and able to show religious attitude.
S2	Upholding human values in carrying out duties based on religion, morals and ethics.
S 3	Contributing to improving the quality of life in society, nation, state, and the advancement of civilization based on Pancasila.
S 4	Act as a citizen who is proud and loves the motherland, has nationalism and a sense of responsibility to the state and nation.
S 5	Respect the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.
S 6	Working together and having social sensitivity and concern for society and the environment.
S 7	Obey the law and discipline in the life of society and the state.
S8	Internalize academic values, norms, and ethics.
S 9	Demonstrate a responsible attitude towards work in the field of expertise independently.



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S10	Internalize the spirit of independence, struggle and entrepreneurship.
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4.2.2 Knowledge Aspect

Code	Knowledge Learning Outcomes
PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains in depth.
PP3	Mastering documentation techniques and ICT product quality assurance in depth.
PP4	Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.
PP5	Mastering knowledge about quality assurance and occupational safety and health (K3) principles in the development of ICT products in depth.
PP6	Mastering knowledge of oral and written communication techniques using national and international languages.
PP7	Mastering knowledge about technological developments and the latest issues (ethical, social, legal and economic) related to the ICT field in depth.

4.2.3 Aspects of Specific Skills

Code	Achievement of Specific Skills Learning
KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).





KK2	Able to identify and analyze needs, design, realize and test ICT / science and technology products that are innovative and applicable according to applicable standards by taking into account ethical, social, legal and economic factors.
ККЗ	Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / Science and Technology products using applicable standards.
KK4	Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT / science and technology products.
KK5	Able to manage resources in the form of time, human resources, costs for developing ICT / science and technology products by utilizing project management software and paying attention to Occupational Safety and Health (K3).
KK6	Able to use the latest technology and analyze the impact of computing on individuals, organizations and society.

4.2.4 Aspects of General Skills

Code	General Skills Learning Outcomes
KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
KU2	Able to demonstrate independent, quality and measurable performance.
KU3	Able to study cases of the application of science and technology that pay attention to and apply humanities values according to their field of expertise in order to produce prototypes, standard procedures, designs or works of art, compile the results of their studies in the form of working papers, design specifications, or art essays, and upload them on the website College.
KU4	Able to compile the results of application case studies in the area of expertise possessed in the form of working papers, design specifications, or art essays, and upload them on the college website.





KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.
KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.
KU7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.
KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.
KU9	Able to document, store, secure, and retrieve data to ensure validity and prevent plagiarism.
KU10	Able to recognize needs, adapt and demonstrate ability to continue self- development (lifelong learning).
KU11	Able to communicate using international languages orally and in writing.





CHAPTER V

COURSE DISTRIBUTION MATRIC

5.1 Course Organizational Matrix in Curriculum Structure

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5.2 Organizational Matrix for the 2021 MBKM Study Program Details

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5.3 Map of the Informatics Engineering DIV Study Program with the Implementation of the MBKM Program

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5.4 Curriculum Tree









CHAPTER VI

IMPLEMENTATION CURRICULUM DESIGN

INDEPENDENT LEARNING INDEPENDENT CAMPUS

6.1 Distribution of 2021 MBKM Curriculum Courses

The distribution of courses in the 2021 Curriculum of the D4 Informatics Engineering Study Program consists of eight semesters, namely:

SEM	ESTER 1								
No	MK CODE		MUCDOUD	CREDI	FS WEIGHT	SVS	HOU	TOTAL	
INO	MK CODE	SUBJECT	MK GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI211001	Pancasila	WN	2		2	2		2
2	RTI211002	Information Technology	WP	2		2	4		4
3	RTI211003	Critical thinking and problem solving	WP	2		2	4		4
4	RTI211004	Mathematics 1	WP	3		3	6		6
5	RTI211005	English 1	WP-PT	2		2	4		4
6	RTI211006	Basic Programming	WP	2		2	4		4
7	RTI211007	Programming Basic Practicum	WP		3	3		6	6
8	RTI211008	Occupational Health and Safety	WP-PT	2		2	4		4
	TOTAL HO	DURS / SKS PER WEEK		15	3	18	28	6	34





N.	MK CODE	CUDIECT		CREDIT	S WEIGHT	GVG	HOUR	S / WEEK	TOTAL
INO	MK CODE	SUBJECT	MIK GROUP	THEORY	PRACTICE	242	THEORY	PRACTICE	HOURS
1	RTI212001	Religion	WN	2		2	2		2
2	RTI212002	Mathematics 2	WP	2		2	4		4
3	RTI212003	English 2	WP-PT	2		2	4		4
4	RTI212004	Operating system	WP	2		2	4		4
5	RTI212005	Software engineering	WP	2		2	4		4
6	RTI212006	Database	WP	2		2	4		4
7	RTI212007	Database Practicum	WP		2	2		4	4
8	RTI212008	Algorithms And Data Structures	WP	2		2	4		4
9	RTI212009	Practicum Algorithms and Data Structures	WP		2	2		4	4
	TO	TAL HOURS / SKS PER WEEK		14	4	18	26	8	34

3RD SEMESTER

No	MK CODE	SUDIECT	MK GROUD	CREDI	CREDITS WEIGHT		HOURS / WEEK		TOTAL
INO	MIK CODE	SUBJECT	WIK OKOUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI213001	Interface Design	WP	2		2	4		4
2	RTI213002	Object Oriented Analysis And Design	WP		2	2		4	4
3	RTI213003	Artificial intelligence	WP	2		2	4		4
4	RTI213004	Web Design & Programming	WP		3	3		6	6
5	RTI213005	Advanced Database	WP		2	2		4	4





6	RTI213006	Math 3	WP	2		2	4		4
7	RTI213007	Object Based Programming	WP	2		2	4		4
8	RTI213008	Object-Based Programming Practicum	WP		2	2		4	4
9	RTI213009	QMS	WP-PT	2		2	4		4
	TOTAL HOU		10	9	19	20	18	38	

No	MK CODE	SUDIECT		CREDI	TS WEIGHT	SVS	HOUI	HOURS / WEEK	
INO	WIK CODE	SUBJECT	WIK UKUUF	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI214001	Citizenship	WN	2		2	2		2
2	RTI214002	Project 1	WP		3	3		6	6
3	RTI214003	Computational Statistics	WP	2		2	4		4
4	RTI214004	Machine Learning	WP		3	3		6	6
5	RTI214005	Advanced Web Programming	WP		3	3		6	6
6	RTI214006	Computer network	WP	2		2	4		4
7	RTI214007	Computer Network Practicum	WP		3	3		6	6
	TOTAL	HOURS / SKS PER WEEK		6	12	18	10	24	34

5TH SEMESTER

No	MK CODE	SUDIECT		CREDI	IS WEIGHT	SVS	HOUI	RS / WEEK	TOTAL HOURS 4 6
INO	MIK CODE	SUBJECT	WIK GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI215001	Entrepreneurship	WP-PT	2		2	4		4
2	RTI215002	Project 2	WP		3	3		6	6
3	RTI215003	Mobile Programming	WP		3	3		6	6





4	RTI215004	business intelligence	WP		3	3		6	6
5	RTI215005	Software Testing	WP	2		2	4		4
6	RTI215006	Indonesian	WN	2		2	2		2
7	RTI215007	Management information System	WP	2		2	4		4
8	RTI215008	Cloud Computing	WP		2	2		4	4
	TOTAL	HOURS / SKS PER WEEK		8	11	19	14	22	36

6TH SEMESTER

No	No MK CODE SUBJECT		MK GROUD	CREDIT	S WEIGHT		HOURS / WEEKTTHEORYPRACTICET444464466466466566		TOTAL
INO	MIK CODE	SUBJECT	WIK OKOUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI216001	Job Preparation English	WP-PT	2		2	4		4
2	RTI216002	Decision Support System	WP		2	2		4	4
3	RTI216003	Big Data	WP		3	3		6	6
4	RTI216004	Research methodology	WP	2		2	4		4
5	RTI216005	Internet Of Things	WP		3	3		6	6
6	RTI216006	Image Processing And Computer Vision	WP		3	3		6	6
7	7 RTI216007 Framework Based Programming		WP		3	3		6	6
	TOT	TAL HOURS / SKS PER WEEK		4	14	18	8	28	36

MK of choice 7TH SEMESTER

				CREDITS WEIGHT			HOURS / WEEK		ΤΟΤΑΙ
No	MK CODE	SUBJECT	MK GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
		Industrial Internship 1 (2							
1	RTI217001	months)	WP		8	8		16	16
		Industrial Internship 2 (4							
2	RTI217002	months)	Р		12	12		24	24





3	RTI217003	Thematic KKN	Р	12	12	24	24
4	RTI217004	Teaching in schools	Р	12	12	24	24
5	RTI217005	Student exchange	Р	12	12	24	24
6	RTI217006	Study	Р	12	12	24	24
		Entrepreneurial Activities					
7	RTI217007	1	Р	12	12	24	24
8	RTI217008	Independent Project 1	Р	12	12	24	24
9	RTI217009	Humanity Project	Р	12	12	24	24
Т	OTAL HOUR	S / MANDATORY SKS					
	PI	ER WEEK		20	20	40	40

MK must be taken

20 credits

12 credits

18 credits

SEMESTER 8

	MK			CREDITS WEIGHT			HOURS	/ WEEK	TOTAL
No	CODE	SUBJECT	MK GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI218001	Thesis	WP		8	8		16	16
1	RTI218001	Project management	Р	2		2	4		4
2	RTI218002	Career development	Р	2		2	4		4
3	RTI218003	Industrial Internship 3	Р		10			20	20
4	RTI218004	Entrepreneurial Activities 2	Р		10			20	20
5	RTI218005	Independent Project 2	Р		10			20	20
Т	OTAL HOUR PI	S / MANDATORY SKS ER WEEK				12			24

MK must be traveled at a minimum

MK must be taken to the maximum





	CREDIT	S WEIGHT		HOURS	TOTAL	
TOTAL HOURS/CREDITS PER WEEK	THEORY	PRACTICE	TOTAL SKS	THEORY	PRACTICE	HOURS
OVERALL	57	81	14 4	106	162	276
	H	PSKS	HOURS/SUNDAY		_	
PERCENTAGE OF OVERALL	THEORY	PRACTICE	THEORY	PRACTICE		
HOURS/CREDITS PER WEEK	0.40	0.57	0.38	0.59		





a. Subjects removed in the 2021 Curriculum Reconstruction

MK code	Subject
RTI201002	Documentation Techniques
RTI201003	Communication and Organizational Science
RTI201004	Office Computer Applications
RTI201007	Discrete mathematics
RTI202006	Linear Algebra
RTI204003	Project management
RT20I4007	Database Management System
RTI205001	E-Business
RTI205007	Network Programming
RTI206001	Digital Entrepreneurship
RTI206004	Multimedia Computing
RTI207001	Capita Selecta
RTI207003	Thesis proposal
RTI207004	Distributed Systems
RTI207006	Games Programming
RTI208002	IT Professional Ethics

b. Courses that change their names in the 2021 Curriculum Reconstruction

MK code	Subject	New MK name
	Information Technology	
RTI201006	Concept	Information Technology
		Management information
RTI204001	Information Systems	System
RTI205004	Data Warehouses	business intelligence
RTI206003	Data Technology	Big Data

c. New Course in Curriculum Reconstruction 2021





MK code	Subject
RTI211003	Critical thinking and problem solving
RTI211004	Mathematics 1
RTI212002	Mathematics 2
RTI213006	Math 3
RTI213009	QMS
RTI215008	Cloud Computing
RTI217001	Industrial Internship 1 (2 months)
RTI217002	Industrial Internship 2 (4 months)
RTI217003	Thematic KKN
RTI217004	Teaching in schools
RTI217005	Student exchange
RTI217006	Study
RTI217007	Entrepreneurial Activities 1
RTI217008	Independent Project 1
RTI217009	Humanity Project
RTI218001	Project management
RTI218002	Career development
RTI218003	Industrial Internship 3
RTI218004	Entrepreneurial Activities 2
RTI218005	Independent Project 2





CHAPTER VII RECONSTRUCTION OF 2021 MBKM CURRICULUM WITH 2020-2018 CURRICULUM

7.1 2018 MBKM Curriculum Structure

N	MK CODE	SUBJECT	MUCDOUD	CREDITS WEIGHT		eve	HOURS	TOTAL	
No	MK CODE		MK GROUP	THEO RY	PRACTIC E	SKS	THEORY	PRACTIC E	HOURS
1	RTI181001	Pancasila	WN	2		2	3		3
2	RTI182002	Documentation Techniques	WP	2		2	3		3
3	RTI181003	Communication and Organizational Science	WP	2		2	3		3
4	RTI181004	Office Computer Applications	WP		2	2		6	6
5	RTI181005	English 1	WP-PT	2		2	3		3
6	RTI181006	Information Technology Concept	WP-PT	2		2	3		3
7	RTI181007	Discrete mathematics	WP	2		2	4		4
8	RTI181008	Occupational Health and Safety	WP-PT	2		2	3		3
9	RTI181009	Basic Programming	WP	2		2	4		4
10	RTI181010	Programming Basic Practicum	WP		2	2		6	6
		TOTAL HOURS / SKS PER WEEK		16	4	20	26	12	38





No	MK CODE	SUBJECT	MU CDOUD	CREDITS WEIGHT		SKS	HOURS	TOTAL	
NO	MK CODE		MK GROUP	THEO RY	PRACTIC E	585	THEORY	PRACTIC E	HOURS
1	RTI182001	Religion	WN	2		2	3		3
2	RTI181002	Citizenship	WN	2		2	3		3
3	RTI182003	English 2	WP-PT	2		2	3		3
4	RTI182004	Operating system	WP	2		2	3		3
5	RTI182005	Software engineering	WP	2		2	4		4
6	RTI182006	Linear Algebra	WP	2		2	4		4
7	RTI182007	Database	WP	2		2	3		3
8	RTI182008	Database Practicum	WP		2	2		6	6
9	RTI182009	Algorithms And Data Structures	WP	2		2	3		3
10	RTI182010	Practicum Algorithms and Data Structures	WP		3	3		6	6
		TOTAL HOURS / SKS PER WEEK		16	5	21	26	12	38

			MUCDOUD	CR WI	CREDITS WEIGHT		CREDITS WEIGHT		CREDITS WEIGHT		HOURS	/ WEEK	
No	MK CODE	SUBJECT	WIK GKUUP	THEO RY	PRACTIC E	SKS	THEORY	PRACTIC E	TOTAL HOURS				
1	RTI183001	Interface Design	WP	2		2	3		3				
2	RTI183002	Computational Statistics	WP	2		2	3		3				
3	RTI183003	Artificial intelligence	WP		2	2		4	4				
4	RTI183004	Web Design & Programming	WP		2	2		5	5				
5	RTI183005	Advanced Database	WP		3	3		6	6				
6	RTI183006	Computer network	WP	2		2	3		3				





7	RTI183007	Computer Network Practicum	WP		2	2		5	5
8	RTI183008	Object Based Programming	WP	2		2	3		3
9	RTI183009 Object-Based Programming Practicum WP		WP		2	2		6	6
		8	11	19	12	26	38		

No	MK CODE	SUBJECT	MUCDOUD	CREDITS WEIGHT		SVS	HOURS	TOTAL	
190			MK GKUUI	THEO RY	PRACTIC E	5165	THEORY	PRACTIC E	HOURS
1	RTI184001	Information Systems	WP	2		2	3		3
2	RTI184002	Object Oriented Analysis And Design	WP		3	3		6	6
3	RTI184003	Project management	WP	2		2	3		3
4	RTI184004	Project 1	WP		3	3		9	9
5	RTI184005	Machine Learning	WP		2	2		5	5
6	RTI184006	Advanced Web Programming	WP		3	3		6	6
7	RTI184007	Database Management System	WP		3	3		6	6
		4	14	18	6	32	38		

Na	MIZ CODE	SUBJECT	MUCDOUD	CREDITS WEIGHT		SVS	HOURS	TOTAL	
110	WIK CODE		MK GKOUI	THEO RY	PRACTIC E	<u>SK</u> 5	THEORY	PRACTIC E	HOURS
1	RTI186001	E-Business	WP	2		2	3		3
2	RTI186002	Project 2	WP		4	4		12	12
3	RTI186003	Mobile Programming	WP		3	3		8	8
4	RTI186004	Data Warehouses	WP		3	3		6	6
5	RTI186005	Software Testing	WP	2		2	3		3
6	RTI186006	Network Programming	WP		3	3		6	6





TOTAL HOURS / SKS PER WEEK 4 13 17 6 32 38
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6TH SEMESTER

No	MK CODE	SUBJECT	MKCDOUD	CREDITS WEIGHT		SVS	HOURS	TOTAL	
INO	MIK CODE		MK GKUUF	THEO RY	PRACTIC E	313	THEORY	PRACTIC E	HOURS
1	RTI186001	Digital Entrepreneurship	WP	2		2	4		4
2	RTI186002	Decision Support System	WP		3	3		6	6
3	RTI186003	Data Technology	WP		3	3		6	6
4	RTI186004	Multimedia Computing	WP	2		2	4		4
5	RTI186005	Internet Of Things	WP		3	3		6	6
6	RTI186006	Image Processing And Computer Vision	WP		3	3		6	6
7	RTI186007	Framework Based Programming	WP		3	3		6	6
		4	15	19	8	30	38		

				CREDITS WEIGHT			HOURS / WEEK		ТОТ
									AL
Ν			MK						НО
0	MK CODE	SUBJECT	GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	URS
1	RTI187001	Industrial Internship 1 (2 months)	WP		8	8		16	16
2	RTI187002	Industrial Internship 2 (4 months)	Р		12	12		24	24
3	RTI187003	Project 3	Р		6	6		12	12





4	RTI187004	IT Project Management	Р	2	2	4	4
5	RTI187005	Research methodology	Р	2	2	4	4
6	RTI187006	Career development	Р	2	2	4	4
	TOTAL HOU	RS / MANDATORY SKS PER WEI		20		40	

MK must be taken

20 credits

				CREDITS WEIGHT		HOURS / WEEK		ТОТ	
N 0	MK CODE	SUBJECT	MK GROUP	THEORY	PRACTICE	SKS	THEORY	PRACTICE	AL HO URS
1	RTI188001	Job Preparation English	Р	2		2	4		4
2	RTI188002	Indonesian	WN	2		2	4		4
3	RTI188003	Industrial Internship 3	Р		10	10		20	20
4	RTI188004	Thesis	WP		8	8		16	16
	ΤΟΤΑ	AL HOURS / SKS PER WEEK				22			44
	MK must	be traveled at a minimum	12 credits						
	MK must	be taken to the maximum	20 credits						
				CREDITS	WEIGHT		HOURS	/ WEEK	ТОТ
	TOTAL HOURS/CREDITS PER OVERALL WEEK (INTERNATIONAL)			THEORY 52	PRACTICE 94	TOTAL SKS 146	THEORY 84	PRACTICE 220	AL HO URS 304
1								1	

	PS	KS	HOURS	S/SUNDAY
			THEOR	
PERCENTAGE OF HOURS/CREDITS PER WEEK OVERALL	THEORY	PRACTICE	Y	PRACTICE
(INTERNATIONAL)	0.36	0.64	0.28	0.72





		CREDITS	WEIGHT		HOURS	/ WEEK	ТОТ
							AL
				TOTAL			но
		THEORY	PRACTICE	SKS	THEORY	PRACTICE	URS
	TOTAL HOURS / SKS PER WEEK OF ENTIRE COURSE	62	84	146	104	188	292
Γ		PS	KS	HOURS	S/SUNDAY		
				THEOR			
	PROCENTAGE OF HOURS/CREDITS PER WEEK OF	THEORY	PRACTICE	Y	PRACTICE		
	ENTIRE COURSE	0.42	0.58	0.36	0.64		





a. Subjects deleted in the 2018 Curriculum Reconstruction

MK code	Subject
RTI187001	Capita Selecta
RTI187003	Thesis proposal
RTI187004	Distributed Systems
RTI187006	Games Programming
RTI188002	IT Professional Ethics

b. New Course in Curriculum Reconstruction 2018

MK code	Subject
RTI187001	Industrial Internship 1 (2 months)
RTI187002	Industrial Internship 2 (4 months)
RTI187004	IT Project Management
RTI187006	Career development
RTI188003	Industrial Internship 3





7.2 2019 MBKM Curriculum Structure

2019 MBKM CURRICULUM INFORMATICS ENGINEERING DIV STUDY PROGRAM INFORMATION TECHNOLOGY DEPARTMENT

				CREDITS WEIGHT			HOURS / WEEK		TOTAL
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI191001	Pancasila	WN	2		2	3		3
2	RTI191002	Documentation Techniques	WP	2		2	3		3
3	RTI191003	Communication and Organizational Science	WP	2		2	3		3
4	RTI191004	Office Computer Applications	WP		2	2		6	6
5	RTI191005	English 1	WP-PT	2		2	3		3
6	RTI191006	Information Technology Concept	WP-PT	2		2	3		3
7	RTI191007	Discrete mathematics	WP	2		2	4		4
8	RTI191008	Occupational Health and Safety	WP	2		2	3		3
9	RTI191009	Basic Programming	WP	2		2	4		4
10	RTI1910010	Programming Basic Practicum	WP		2	2		6	6
		TOTAL HOURS / SKS PER WEEK		16	4	20	26	12	38





				CREDITS WEIGHT			HOURS / WEEK		TOTAL
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI192001	Religion	WN	2		2	3		3
2	RTI192002	Citizenship	WN	2		2	3		3
3	RTI192003	English 2	WP-PT	2		2	3		3
4	RTI192004	Operating system	WP	2		2	3		3
5	RTI192005	Software engineering	WP	2		2	4		4
6	RTI192006	Linear Algebra	WP	2		2	4		4
7	RTI192007	Database	WP	2		2	3		3
8	RTI192008	Database Practicum	WP		2	2		6	6
9	RTI192009	Algorithms And Data Structures	WP	2		2	3		3
10	RTI1920010	Practicum Algorithms and Data Structures	WP		3	3		6	6
		TOTAL HOURS / SKS PER WEEK		16	5	21	26	12	38

		SUBJECT		CREDITS WEIGHT			HOURS / WEEK		TOTAL
No	MK CODE		MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI193001	Interface Design	WP	2		2	3		3
2	RTI193002	Computational Statistics	WP	2		2	3		3
3	RTI193003	Artificial intelligence	WP		2	2		4	4
4	RTI193004	Web Design & Programming	WP		2	2		5	5
5	RTI193005	Advanced Database	WP		3	3		6	6
6	RTI193006	Computer network	WP	2		2	3		3
7	RTI193007	Computer Network Practicum	WP		2	2		5	5





8	RTI193008	Object Based Programming	WP	2		2	3		3
9	RTI193009	Object-Based Programming Practicum	WP		2	2		6	6
TOTAL HOURS / SKS PER WEEK				8	11	19	12	26	38

		MK CODE SUBJECT		CREDI	CREDITS WEIGHT		HOURS / WEEK		TOTAL
No	MK CODE		MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI194001	Information Systems	WP	2		2	3		3
2	RTI194002	Object Oriented Analysis And Design	WP		3	3		6	6
3	RTI194003	Project management	WP	2		2	3		3
4	RTI194004	Project 1	WP		3	3		9	9
5	RTI194005	Machine Learning	WP		2	2		5	5
6	RTI194006	Advanced Web Programming	WP		3	3		6	6
7	RTI194007	Database Management System	WP		3	3		6	6
		TOTAL HOURS / SKS PER WEEK		4	14	18	6	32	38

				CREDITS WEIGHT			HOUF	TOTAL	
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI195001	Entrepreneurship	WP-PT	2		2	4		4
2	RTI195002	Project 2	WP		3	3		6	6
3	RTI195003	Mobile Programming	WP		3	3		6	6
4	RTI195004	Business Intelligence	WP		3	3		6	6
5	RTI195005	Software Testing	WP	2		2	4		4





6	RTI195006	Indonesian	WN	2		2	2		2
7	RTI195007	QMS	WP-PT	2		2	4		4
8	RTI195008	Cloud Computing	WP		2	2		4	4
		TOTAL HOURS / SKS PER WEEK		8	11	19	14	22	36

6TH SEMESTER

		SUBJECT		CREDI	FS WEIGHT		HOUH	RS / WEEK	TOTAL
No	MK CODE		MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOURS
1	RTI196001	Job Preparation English	WP-PT	2		2	4		4
2	RTI196002	Decision Support System	WP		2	2		4	4
3	RTI196003	Big Data	WP		3	3		6	6
4	RTI196004	Research methodology	WP	2		2	4		4
5	RTI196005	Internet Of Things	WP		3	3		6	6
6	RTI196006	Image Processing And Computer Vision	WP		3	3		6	6
7	RTI196007	Framework Based Programming	WP		3	3		6	6
TOTAL HOURS / SKS PER WEEK				4	14	18	8	28	36





				CREDIT	DITS WEIGHT		HOURS / WEEK		
Ν				THEO	PRACTIC			PRACTIC	TOTAL
0	MK CODE	SUBJECT	MK GROUP	RY	Е	SKS	THEORY	Е	HOURS
		Industrial Internship 1 (2							
1	RTI197001	months)	WP		8	8		16	16
		Industrial Internship 2 (4							
2	RTI197002	months)	Р		12	12		24	24
3	RTI197003	Thematic KKN	Р		12	12		24	24
4	RTI197004	Teaching in schools	Р		12	12		24	24
5	RTI197005	Student exchange	Р		12	12		24	24
6	RTI197006	Study	Р		12	12		24	24
7	RTI197007	Entrepreneurial Activities 1	Р		12	12		24	24
8	RTI197008	Independent Project 1	Р		12	12		24	24
9	RTI197009	Humanity Project	Р		12	12		24	24
	TOTAL HOURS / MANDATORY SKS PER WEEK				20	20		40	40

MK must be taken

20 credits





				CREDITS WEIGHT			HOURS	/ WEEK	
Ν				THEO	PRACTIC			PRACTIC	TOTAL
0	MK CODE	SUBJECT	MK GROUP	RY	Е	SKS	THEORY	E	HOURS
1	RTI198001	Thesis	WP		8	8		16	16
2	RTI198002	Project management	Р	2		2	4		4
3	RTI198003	Career development	Р	2		2	4		4
4	RTI198004	Industrial Internship 3	Р		10			20	20
5	RTI198005	Entrepreneurial Activities 2	Р		10			20	20
6	RTI198006	Independent Project 2	Р		10			20	20
TOTAL HOURS / MANDATORY SKS PER WEEK						12			24
	MK must be trave	led at a minimum	12 credits	•					

MK must be taken to the maximum

18 credits

	CREDIT	S WEIGHT		HOURS	/ WEEK	
	THEO	PRACTIC	TOTAL		PRACTIC	TOTAL
	RY	Е	SKS	THEORY	Е	HOURS
TOTAL HOURS/CREDITS PER WEEK OVERALL	56	87	147	92	188	288

	P	PSKS HOURS/SUNDAY		
	THEO	PRACTIC	THEOR	PRACTIC
PERCENTAGE OF OVERALL HOURS/CREDITS PER WEEK	RY	Е	Y	Е





		-	
0.38	0.59	0.32	0.65





a. Subjects deleted in the 2019 Curriculum Reconstruction

MK code	Subject
RTI195001	E-Business
RTI195007	Network Programming
RTI196001	Digital Entrepreneurship
RTI196004	Multimedia Computing
RTI197001	Capita Selecta
RTI197003	Thesis proposal
RTI197004	Distributed Systems
RTI197006	Games Programming
RTI198002	IT Professional Ethics

b. Courses that changed their names in the 2019 Curriculum Reconstruction

MK code	Subject	New MK name
RTI195004	Data Warehouses	business intelligence
RTI196003	Data Technology	Big Data





c. New Course in Curriculum Reconstruction 2019

MK code	Subject
RTI195007	QMS
RTI195008	Cloud Computing
RTI197001	Industrial Internship 1 (2 months)
RTI197002	Industrial Internship 2 (4 months)
RTI197003	Thematic KKN
RTI197004	Teaching in schools
RTI197005	Student exchange
RTI197006	Study
RTI197007	Entrepreneurial Activities 1
RTI197008	Independent Project 1
RTI197009	Humanity Project
RTI198002	Project management
RTI198003	Career development
RTI198004	Industrial Internship 3
RTI198005	Entrepreneurial Activities 2
RTI198006	Independent Project 2





7.3 Structure of the 2020 MBKM Curriculum

ЪŢ	NUCODE			CR WI	EDITS EIGHT	OV O	Н	OURS / WEEK	TOTAL	
No	MIK CODE	SUBJECT	MK GROUP	THEO RY	PRACTIC E	SKS	THEO RY	PRACTICE	HOURS	
1	RTI201001	Pancasila	WN	2		2	3		3	
2	RTI201002	Documentation Techniques	WP	2		2	3		3	
3	RTI201003	Communication and Organizational Science	WP	2		2	3		3	
4	RTI201004	Office Computer Applications	WP		2	2		6	6	
5	RTI201005	English 1	WP-PT	2		2	3		3	
6	RTI201006	Information Technology Concept	WP-PT	2		2	3		3	
7	RTI201007	Discrete mathematics	WP	2		2	4		4	
8	RTI201008	Occupational Health and Safety	WP	2		2	3		3	
9	RTI201009	Basic Programming	WP	2		2	4		4	
10	RTI2010010	Programming Basic Practicum	WP		2	2		6	6	
		TOTAL HOURS / SKS PER WEE	16	4	20	26	12	38		





SEMESTER 2 CREDITS WEIGHT HOURS / WEEK TOTAL **SUBJECT MK GROUP** SKS No MK CODE HOURS THEORY PRACTICE THEORY PRACTICE RTI202001 Religion WN RTI202002 Citizenship WN RTI202003 English 2 WP-PT RTI202004 Operating system WP RTI202005 Software engineering WP RTI202006 Linear Algebra WP RTI202007 Database WP 8 RTI202008 Database Practicum WP RTI202009 Algorithms And Data Structures WP 10 RTI2020010 Practicum Algorithms and Data Structures WP **TOTAL HOURS / SKS PER WEEK**

			MKCDOUD	CREDITS	S WEIGHT		HOURS /	WEEK	TOTAL
No	MK CODE	SUBJECT	WIK GKOUI	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS
1	RTI203001	Interface Design	WP	2		2	4		4
2	RTI204002	Object Oriented Analysis And Design	WP		2	2		4	4
3	RTI203003	Artificial intelligence	WP	2		2	4		4
4	RTI203004	Web Design & Programming	WP		3	3		6	6
5	RTI203005	Advanced Database	WP		2	2		4	4
6	RTI203006	Math 3	WP	2		2	4		4
7	RTI203007	Object Based Programming	WP	2		2	4		4
8	RTI203008	Object-Based Programming Practicum	WP		2	2		4	4




9	RTI203009 QMS	WP-PT	2		2	4		4
TOTAL HOURS / SKS PER WEEK			10	9	19	20	18	38

SEMESTER 4

No	MK CODE	SUBJECT	MK GROUP	CREDITS WEIGHT		SVS	Н	OURS / WEEK	TOTAL
110	WIK CODE			THEO RY	PRACTIC E	585	THEO RY	PRACTICE	HOURS
1	RTI204001	Critical Thinking and Problem Solving	WP	2		2		4	4
2	RTI204002	Project 1	WP		3	3		6	6
3	RTI204003	Computational Statistics	WP	2		2	4		4
4	RTI204004	Machine Learning	WP		3	3		6	6
5	RTI204005	Advanced Web Programming	WP		3	3		6	6
6	RTI204006	Computer network	WP	2		2	4		4
7	RTI204007	Computer Network Practicum	WP		3	3		6	6
		TOTAL HOURS / SKS PER WEE	6	12	18	8	28	36	

SEMESTER 5

No	MIZ CODE	SUBJECT	MIZ CDOUD	CREDITS WEIGHT		SIZE	HOURS / WEEK		TOTAL
INO	MK CODE		WIK GROUI	THEO RY	PRACTIC E	585	THEO RY	PRACTICE	HOURS
1	RTI205001	Entrepreneurship	WP-PT	2		2	4		4
2	RTI205002	Project 2	WP		3	3		6	6
3	RTI205003	Mobile Programming	WP		3	3		6	6
4	RTI205004	Business Intelligence	WP		3	3		6	6
5	RTI205005	Software Testing	WP	2		2	4		4





6	RTI205006	Indonesian	WN	2		2	2		2
7	RTI205007	Management Information System	WP	2		2	4		4
8	RTI205008	Cloud Computing	WP		2	2		4	4
	TOTAL HOURS / SKS PER WEEK				11	19	14	22	36

SEMESTER 6

NT.	MUCODE		MUCDOUD	CREDITS WEIGHT		SIZE	HOURS / WEEK		TOTAL
INO	MIK CODE	SUBJECT	MK GROUP	THEO RY	PRACTIC E	565	THEO RY	PRACTICE	HOURS
1	RTI196001	Job Preparation English	WP-PT	2		2	4		4
2	RTI196002	Decision Support System	WP		2	2		4	4
3	RTI196003	Big Data	WP		3	3		6	6
4	RTI196004	Research methodology	WP	2		2	4		4
5	RTI196005	Internet Of Things	WP		3	3		6	6
6	RTI196006	Image Processing And Computer Vision	WP		3	3		6	6
7	RTI196007	Framework Based Programming	WP		3	3		6	6
		TOTAL HOURS / SKS PER WEE	4	14	18	8	28	36	

SEMESTER 7

				CREDITS WEIGHT			HOURS / WEEK		ΤΟΤΑ
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTIC E	SKS	THEORY	PRACTICE	L HOU RS
1	RTI207001	Industrial Internship 1 (2	WP		8	8		16	16
1	K11207001	Industrial Internship 2 (4	VV 1		0	0		10	10
2	RTI207002	months)	Р		12	12		24	24
3	RTI207003	Thematic KKN	Р		12	12		24	24
4	RTI207004	Teaching in schools	Р		12	12		24	24





5	RTI207005	Student exchange	Р	12	12	24	24
6	RTI207006 Study P		12	12	24	24	
7	RTI207007	Entrepreneurial Activities 1	Р	12	12	24	24
8	RTI207008	Independent Project 1	Р	12	12	24	24
9	9 RTI207009 Humanity Project P		12	12	24	24	
	TOTAL HO	URS / MANDATORY SKS PE	20	20	40	40	

MK must be taken

20 credits

SEMESTER 8

				CREDITS WEIGHT			HOURS / WEEK		ΤΟΤΑ
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTIC E	SKS	THEORY	PRACTICE	L HOU RS
1	RTI208001	Thesis	WP		8	8		16	16
2	RTI208002	Project management	Р	2		2	4		4
3	RTI208003	Career development	Р	2		2	4		4
4	RTI208004	Industrial Internship 3	Р		10			20	20
5	RTI208005	Entrepreneurial Activities 2	Р		10			20	20
6	RTI208006	Independent Project 2	Р		10				20
TOTAL HOURS / MANDATORY SKS PER WEEK					12			24	

MK must be traveled at a minimum

12 credits

MK must be taken to the maximum

18 credits

TOTA **CREDITS WEIGHT** HOURS / WEEK L THEOR PRACTIC HOU TOTAL SKS THEORY PRACTICE Y Е RS TOTAL HOURS/CREDITS PER WEEK OVERALL 83 102 60 147 176 286





	Р	SKS	HOURS/SU NDAY	
	THEOR	PRACTIC		PRACTIC
PERCENTAGE OF OVERALL HOURS/CREDITS PER	Y	Ε	THEORY	Ε
WEEK	0.41	0.56	0.36	0.62





a. Subjects deleted in the 2020 Curriculum Reconstruction

MK code	Subject			
RTI204003	Project management			
RT20I4007	Database Management System			
RTI205001	E-Business			
RTI205007	Network Programming			
RTI206001	Digital Entrepreneurship			
RTI206004	Multimedia Computing			
RTI207001	Capita Selecta			
RTI207003	Thesis proposal			
RTI207004	Distributed Systems			
RTI207006	Games Programming			
RTI208002	IT Professional Ethics			

b. Courses that change their names in the 2020 Curriculum Reconstruction

MK code	Subject	New MK name
RTI204001	Information Systems	Management information System
RTI205004	Data Warehouses	business intelligence
RTI206003	Data Technology	Big Data

c. New Course in Curriculum Reconstruction 2020

MK code	Subject
RTI203006	Math 3
RTI203009	QMS
RTI204001	Critical Thinking and Problem Solving
RTI205001	Entrepreneurship
RTI205008	Cloud Computing
RTI207001	Industrial Internship 1 (2 months)
RTI207002	Industrial Internship 2 (4 months)
RTI207003	Thematic KKN
RTI207004	Teaching in schools





RTI207005	Student exchange
RTI207006	Study
RTI207007	Entrepreneurial Activities 1
RTI207008	Independent Project 1
RTI207009	Humanity Project
RTI208002	Project management
RTI208003	Career development
RTI208004	Industrial Internship 3
RTI208005	Entrepreneurial Activities 2
RTI208006	Independent Project 2





Appendix I Academic Handbook

VISION AND MISSION INFORMATICS ENGINEERING D-IV STUDY PROGRAM INFORMATION TECHNOLOGY DEPARTMENT ACADEMIC YEAR 2021/2022

Study Program Vision

Becoming an excellent study program in the field of **software engineering** at both national and international levels.

Study Program Mission

- 1. Implementing innovative vocational education based on an applied education system by utilizing technological advances, so as to produce graduates who have competence in the field of software engineering and are ready to compete at the national and global levels.
- 2. Carry out applied research based on products and services in the field of software engineering.
- 3. Carry out community service using advances in software engineering to improve welfare.
- 4. Realizing mutually beneficial cooperation with various parties both inside and outside the country in the field of software engineering

Study Program Objectives

- 1. To produce graduates in the field of software engineering who are godly, ethical and moral, knowledgeable and highly skilled, ready to work and/or entrepreneurs who are able to compete on a national and global scale.
- Producing applied research in the field of software engineering on a national and international scale, increasing effectiveness, efficiency and productivity in the business and industrial world, and leading to the attainment of Intellectual Property Rights (IPR), obtaining patents and public welfare.
- 3. Producing community service that is carried out through the application and dissemination of science and technology and the provision of professional services in the field of software engineering so that it is directly beneficial in improving people's welfare.
- 4. Realization of mutually beneficial cooperation with various parties both inside and outside the country in the field of software engineering to increase competitiveness.









2021 CURRICULUM INFORMATICS ENGINEERING DIV STUDY PROGRAM INFORMATION TECHNOLOGY DEPARTMENT ACADEMIC YEAR 2021/2022

	SEMESTER	1							
				CREDIT	S WEIGHT		HOUF	RS / WEEK	TOTAL
No	MK CODE	SUBJECT	GROUP MK	THEOR Y	PRACTIC E	SKS	THEO RY	PRACTICE	HOURS
1	RTI211001	Pancasila	WN	2		2	2		2
		Information Technology							
2	RTI211002	Concept	WP	2		2	4		4
		Critical thinking and problem							
3	RTI211003	solving	WP	2		2	4		4
4	RTI211004	Mathematics 1	WP	3		3	6		6
5	RTI211005	English 1	WP-PT	2		2	4		4
6	RTI211006	Basic Programming	WP	2		2	4		4
7	RTI211007	Programming Basic Practicum	WP		3	3		6	6
8	RTI211008	Occupational Health and Safety	WP-PT	2		2	4		4
	TOTAL HOURS / SKS PER WEEK			15	3	18	28	6	34

	SEMESTER	2							
			CDOUD	CREDIT	S WEIGHT		HOUR	S / WEEK	TOTAL
No	MK CODE	SUBJECT	GROUP MK	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOUR S
1	RTI212001	Religion	WN	2		2	2		2
2	RTI212002	Mathematics 2	WP	2		2	4		4
3	RTI212003	English 2	WP-PT	2		2	4		4
4	RTI212004	Operating system	WP	2		2	4		4
5	RTI212005	Software engineering	WP	2		2	4		4
6	RTI212006	Database	WP	2		2	4		4
7	RTI212007	Database Practicum	WP		2	2		4	4
8	RTI212008	Algorithms And Data Structures	WP	2		2	4		4
9	RTI212009	Practicum Algorithms and Data Structures	WP		2	2		4	4
10	RTI212010	Communication and Organizational Science	WP	2		2	4		4



TOTAL HOURS / SKS PER WEEK	16	4	20	30	8	38

	SEMESTER	3							
			000000	CREDITS WEIGHT		HOUR	S / WEEK	TOTAL	
No	MK CODE	SUBJECT	MK	THEOR Y	PRACTICE	SKS	THEO RY	PRACTIC E	HOURS
1	RTI213001	Interface Design	WP	2		2	4		4
2	RTI213002	Quality Management System	WP-PT	2		2	4		4
3	RTI213003	Artificial intelligence	WP	2		2	4		4
4	RTI213004	Web Design & Programming	WP		3	3		6	6
5	RTI213005	Advanced Database	WP		3	3		6	6
6	RTI213006	Math 3	WP	2		2	4		4
7	RTI213007	Object Based Programming	WP	2		2	4		4
8	RTI213008	Object-Based Programming Practicum	WP		3	3		6	6
	TOTAL HOURS / SKS PER WEEK			10	9	19	20	18	38

	SEMESTER	4							
			000110	CREDITS WEIGHT			HOUR	S / WEEK	TOTAL
No	MK CODE	SUBJECT	MK	THEOR Y	PRACTICE	SKS	THEO RY	PRACTICE	HOURS
1	RTI214001	Citizenship	WN	2		2	2		2
2	RTI214002	Object Oriented Analysis And Design	WP		2	2		4	4
3	RTI214003	Project management	WP	2		2	3		3
4	RTI214004	Project 1	WP		3	3		6	6
5	RTI214005	business intelligence	WP		2	2		4	4
6	RTI214006	Computer network	WP	2		2	4		4
7	RTI214007	Computer Network Practicum	WP		2	2		4	4
8	RTI214008	Advanced Web Programming	WP		3	3		6	6
9	RTI214009	Computational Statistics	WP	2		2	4		4
	TOTAL HOURS / SKS PER WEEK			8	12	20	13	24	37





	SEMESTER	5							
				CREDIT	CREDITS WEIGHT		HOUR	S / WEEK	TOTAL
No	MK CODE	SUBJECT	MK GROUP	THEOR	PRACTIC	SKS	THEOR	PRACTIC	HOURS
				Y	E		Y	E	noons
1	RTI215001	Technopreneurship	WP-PT	2		2	4		4
2	RTI215002	Project 2	WP		3	3		6	6
3	RTI215003	Mobile Programming	WP		3	3		6	6
4	RTI215004	Machine Learning	WP		3	3		6	6
5	RTI215005	Software Testing	WP	2		2	4		4
6	RTI215006	Indonesian	WN	2		2	2		2
7	RTI215007	Management information	\\/D	2		2	1		Л
/	111213007	System	VVI	2		2	+		4
8	RTI215008	Cloud Computing	WP		2	2		4	4
	TOTAL HO	OURS / SKS PER WEEK		8	11	19	14	22	36

	SEMESTER	6							
				CREDIT	S WEIGHT		HOUR	S / WEEK	TOTAL
No	MK CODE	SUBJECT	MK GROUP	THEOR	DRACTICE	SKS	THEOR	PRACTIC	HOUR
				Y	PRACTICE		Y	E	S
1	RTI216001	Job Preparation English	WP-PT	2		2	4		4
2	RTI216002	Decision Support System	WP		2	2		4	4
3	RTI216003	Big Data	WP		3	3		6	6
4	RTI216004	Research methodology	WP	2		2	4		4
5	RTI216005	Internet Of Things	WP		3	3		6	6
6	PTI216006	Image Processing And	\\/D		2	2		6	6
0	KIIZI0000	Computer Vision	VVF		5	5		0	0
7	PTI216007	Framework Based	W/D		2	2		6	6
	N11210007	Programming	VVP		3	3		0	0
TOTAL HOURS / SKS PER WEEK			4	14	18	8	28	36	

	SEMESTER	7									
				CREDITS WEIGHT		CREDITS WEIGHT			HOUR	S / WEEK	TOTAL
				THEOR			THEOR		HOUR		
No	MK CODE	SUBJECT	MK GROUP	Y	PRACTICE	SKS	Y	PRACTICE	S		
1	RTI217001	Industrial Internship 1	WP		8	8		16	16		
2	RTI217002	Industrial Internship 2	Р		12	12		24	24		





3	RTI217003	Thematic KKN	Р	12	12	24	24
4	RTI217004	Teaching in schools	Р	12	12	24	24
5	RTI217005	Study	Р	12	12	24	24
6	RTI217006	Entrepreneurial Activities 1	Р	12	12	24	24
7	RTI217007	Independent Project 1	Р	12	12	24	24
8	RTI217008	Humanity Project	Р	12	12	24	24
TOT	TOTAL HOURS / MANDATORY SKS PER WEEK			20	20	40	40

SEMESTER

8

				CREDITS WEIGHT	S WEIGHT		HOUR	TOTAL	
No	MK CODE	SUBJECT	MK GROUP	THEOR Y	PRACTICE	SKS	THEOR Y	PRACTICE	HOUR S
1	RTI218001	Thesis	WP		8	8		16	16
2	RTI218002	Career development	Р	2		2	4		4
3	RTI218003	Industrial Internship 3	Р		10	10		20	20
4	RTI218004	Entrepreneurial Activities 2	Р		10	10		20	20
5	RTI218005	Independent Project 2	Р		10	10		20	20
TOTAL HOURS / MANDATORY SKS PER WEEK						10			20

	CREDITS	WEIGHT	TOTAL	HOUR	TOTAL		
TOTAL HOURS/CREDITS PER WEEK OVERALL	THEORY	PRACTICE	SKS	THEORY	PRACTICE	HOURS	
	63	81	144	117	162	279	





Jejaring Kurikulum Tahun 2021/2022







SHORT SYLLABUS IN 2021 INFORMATICS ENGINEERING D-IV STUDY PROGRAM INFORMATION TECHNOLOGY DEPARTMENT ACADEMIC YEAR 2021/2022

Subject	:	Panc	asila	
Course Code	:	RTI211001		
Credits / Hour	:	2 Cro	edits (2 Hours per Week)	
Semester	:	1		
Graduate Learning Outcomes	:	S2	Upholding human values in carrying out duties based on religion, morals and ethics.	
		S 3	Contributing to improving the quality of life in society, nation, state, and the advancement of civilization based on Pancasila.	
		S4	Act as a citizen who is proud and loves the motherland, has nationalism and a sense of responsibility to the state and nation.	
		S 5	Respect the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.	
		S6	Working together and having social sensitivity and concern for society and the environment.	
		S7	Obey the law and discipline in the life of society and the state.	
		S8	Internalize academic values, norms, and ethics.	
		KU2	Able to demonstrate independent, quality and measurable performance.	
		Mastering the concepts of ideology, institutions and rules in the state: demonstrate an attitude of nationalism, concern for society and		
Course Learning		the en	nvironment, respect for cultural diversity, views, religions and	
Outcomes	:	beliet indep accou	fs, uphold human values, and obey the law; able to demonstrate endent performance in completing assignments by taking into int academic values, norms and ethics	
Subject	:			
Pancasila education in his	Pancasila education in historical, cultural, juridical, philosophical view, Pancasila in the context			

Pancasila education in historical, cultural, juridical, philosophical view, Pancasila in the context of the history of the struggle of the Indonesian nation, Pancasila as a philosophical system, the 1945 Constitution of the Republic of Indonesia, Amendments to the 1945 Constitution of the Republic of Indonesia, Trias Politica in the Republic of Indonesia, State Institutions according to the 1945 Constitution of the Republic of Indonesia, Pancasila as ideology nationalism, Other Ideologies that are developing in the world, Pancasila and Human Rights, Implementation of Human Rights in the 1945 Constitution of the Republic of Indonesia, Corruption Crimes, Pancasila as a Development Paradigm

Reference

1. Pancasila Teaching Module





- Sri Hudiarini, et al, Pancasila Education in the Historical and State Administration
- 2. Perspective of the Republic of Indonesia Revised Edition, Aditya Media Publishing, 2016, Yogyakarta
- Muhammad Noor Syam, Translation of Pancasila Philosophy in Legal Philosophy (As the
- 3. Foundation for Development of the National Legal System),

Pancasila Laboratory, State University of Malang, 2000, Malang

Subject	: Information Technology Concept			
Course Code	: RTI211002			
Credits / Hour	: 2 Credits (4 Hours per Week)			
Semester	: 1			
Graduate Learning	: S8 Internalize academic values, norms, and ethics.			
Outcomes				
	 PP1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. 			
	the latest issues (ethical, social, legal and economic) related to the ICT field.			
	KU2 Able to demonstrate independent, quality and measurable performance.			
Course Learning	: Mastering ICT Concepts, Technology Innovation, Scientific and			
Outcomes	ICT developments and the latest issues, Engineering Ethics,			
	Computer Systems, Computer Systems Concepts, Data Representation, Boolean Algebra, Flowcharts, Computer Networks and the Internet, IT Applications in Various Fields, IT Field Certification; able to demonstrate independent performance in completing tasks related to the concept of information technology.			
Subject	:			
Technology Concepts, 7	echnological Innovations, Science and Technology Developments, ICT			
Developments, Comput	er Systems Concepts, Application Software Development Concepts,			
Collaboration and Rep	ository Tools, Engineering Ethics, Database Concepts, Computer			
Networks and the Intern	et, Network Security Concepts, IS Concepts, IT Applications in Various			
Pields, 11 Field Certific				
1 Glan I Coulthard	• 012 Computing New McGreen Hill Book			
1. Oten J. Coulinard, 2012, Computing Now, McGraw-Hill Book.				
2. Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition, McGraw-Hill				
3. Munir, Curriculum Bandung. 2009, p.9	Munir, Curriculum based on Information and Communication technology, Cet.II. Bandung. 2009, p.9			
4. Davis, WS Comput	Davis, WS Computers and Information Systems: An Introduction. West Publishing			
5. Khalili, TM Manag Creation. McGraw-	ement of Technology: The Key to Competitiveness and Wealth Hill. 2000			





6. Samuel, A. Weir, J. Introduction to Engineering Design. Elsevier Science & Technology Books. 1999.

Subject	: Critic	al thinking and problem solving		
Course Code	: RTI2	: RTI211003		
Credits / Hour	: 2 Cre	: 2 Credits (4 Hours per Week)		
Semester	: 1			
Graduate Learning Outcomes	: S8	Internalize academic values, norms, and ethics.		
	S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
	KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.		
	KU2	Able to demonstrate independent, quality and measurable performance.		
	KU1 0	Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).		
Course Learning	: Maste	ring the concept of thinking and problem solving;		
Outcomes	independently able to identify problems and needs, perform analysis, gather information, think logically, critically, and innovatively in solving simple problems by considering values, norms, and ethics			
Subject	:			
Thinking and reasoning critical thinking, Adva reasoning: Advanced Le	g, Critical nced prob evel.	thinking: the basics ,Problem solving: basic skills, Applied lem solving, Problem solving: further techniques, Critical		
Reference	:			
Butterworth, J., & T	Thwaites, C	G. (2013). Thinking skills: Critical thinking and problem		

- ¹. solving. Cambridge UniversityPress.
- 2. Cohen, M. (2015). Critical thinking skills for dummies. John Wiley & Sons.

Subject	: Mathematics 1 : RTI211004 : 3 Credits (6 Hours per Week)			
Course Code				
Credits / Hour				
Semester	:1			
Graduate Learning	: S8	Internalize academic values, norms, and ethics.		
Outcomes				
	S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
	PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer		





	networks, etc.), engineering science, and engineering			
	principles in the ICT field in depth			
	principies in the rear neithin deptil.			
	KU2 Able to demonstrate independent, quality and measurable			
	performance.			
Course Learning	: Mastering the concepts of mathematics and applied mathematics;			
Outcomes	able to be responsible for solving mathematical problems			
	independently by taking into account academic values norms and			
	independently by taking into account academic values, norms, and			
	ethics			
Subject	:			
Types of numbers, facto	ors and prime numbers, powers, number systems, Introduction to Algebra,			
Algebraic powers. Algebraic Factoring, Solving linear and polynomial equations, Graphs,				

Series

Reference

- 1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013
- Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012. 2.

Subject	: English 1			
Course Code	: RTI211005			
Credits / Hour	: 2 Credits (4 Hours per Week)			
Semester	:1			
Graduate Learning Outcomes	: S8 Internalize academic values, norms, and ethics.			
	PP6 Mastering knowledge of oral and written communication techniques using national and international languages.			
	KU2 Able to demonstrate independent, quality and measurable performance.			
	KU1 Able to communicate using international languages orally and in writing.			
Course Learning Outcomes	: Mastering knowledge of oral and written communication techniques using English in the context of Informatics Engineering; Able to communicate independently using English orally and in writing in the context of Informatics Engineering by taking into account values, norms and ethics;			
Subject	:			

Topic 1: Computer Applications, Topic 2: Computer Architecture, Topic 3: Multimedia, Topic 4: Networking, Topic 5: Websites, Topic 6: Careers in IT, Topic 7: IT Support Staff, Topic 8: Workstation Health and Safety

Reference

:

- Asri, Atigah Nurul. 2018. English for Informatics 1: Fourth Edition. The module has not 1. been published yet.
- Esteras, Santiago Remacha. (2010). Infotech English for Computer Users Workbook. 2. Cambridge: Cambridge University Press.
- Esteras, Santiago Remacha. (2011). Infotech English for Computer Users Student's Book. 3. Cambridge: Cambridge University Press.





- 4. Glendinning, Eric H and McEwan, John. (2012). Basic English for Computing Revised and Updated. Oxford: Oxford University Press.
- 5. Olejniczak, Maja. (2011). English for Information Technology 1 Vocational English Course
- 5. Book. Essex: Pearson Education Limited.

Subject	: Basic	Programming		
	• PTI211006			
Course Code	. 1112	: K11211000		
Credits / Hour	: 2 Cre	dits (4 Hours per Week)		
Semester	:1			
Graduate Learning Outcomes	: S8	Internalize academic values, norms, and ethics.		
	S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
	PP1 KU2	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Able to demonstrate independent, quality and measurable		
		performance.		
Course Learning Outcomes	: Maste types, Able solve respon	ring the basic concepts of programming in the form of data variables, sequences, selection, looping, arrays and functions; to create algorithms using flowcharts or natural language to case studies or simple problems independently with full asibility and prioritizing academic values, norms and ethics		
Subject	:			
Concept of Algorithms, I Constants, Input-Output Functions/Procedures	Programn Expressio	ning Languages, Case Analysis, Data Types, Variables, on Values, Sequences, Branching, Looping, Arrays,		
Reference	:			
1.Sebesta, Robert, 201 Wesley, Publ.	6. Conce	ot of programming languages global edition, Addison		
2. Sestoft, Peter, 2017.	Program	ning Language Concepts, Springer, Publ.		
3. T. Henny Febriana H Deepublish.	Iarumy, 2	016. Learning Basic Algorithms and C++ Programming,		
4. Rinaldi Munir, 2015	, Algorith	m and Programming, Informatics Publisher		

Subject	 Programming Basic Practicum RTI211007 3 Credits (6 Hours per Week) 			
Course Code				
Credits / Hour				
Semester	:1			
Graduate Learning	: S8	Internalize academic values, norms, and ethics.		
Outcomes				
	S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		





	KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their
		field of expertise and in accordance with work competency
	IZI 1	Alle to demonstrate in lange data multiple and measured by
	KU2	Able to demonstrate independent, quality and measurable
Course Leonsin a		to apply the basic concents of programming neuroly
Course Learning	: Able	to apply the basic concepts of programming, namely
Outcomes	guality	<i>ices</i> , selections, looping, arrays and functions, Able to create <i>i</i> programs according to case studies of simple problems
	indene	and anthy with responsibility and prioritizing academic values
	norms	and ethics
Subject	•	
Drogramming longers	• Installing	Java magnamming tools. Cose Analyzia on commutational
thinking based stores are	Instanne	, Java programming tools, Case Analysis on computational
uninking-based story pro	olems, Da	and Types, variables, Constants, values, Expressions, Input-
Duipul, Flowcharts, Bran	iching, Lo	soping, Arrays, Functions/Procedures.
Keterence	:	
1.Sebesta, Robert, 201Wesley, Publ.	6. Concep	ot of programming languages global edition, Addison
2. Sestoft, Peter, 2017.	Programm	ning Language Concepts, Springer, Publ.

- 3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.
- 4. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher

Subject	: Occupational Health and Safety			
Course Code	: RTI211008			
Credits / Hour	: 2 Credits (4 Hours per Week)			
Semester	: 1			
Graduate Learning	: S8 Internalize academic values, norms, and ethics.			
Outcomes				
	 PP5 Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT product development. KU2 Able to demonstrate independent, quality and measurable performance 			
Course Learning	• Mastering the knowledge of the principles of occupational safety			
Outcomes	and health (K3); Able to implement good and quality theories, concepts and principles of occupational safety and health (K3) in order to improve the health status of workers by taking into account values, norms and ethics.			
Subject	:			





K3 Concept (History of Occupational Health and Safety, Definition of K3, K3 Goals), K3 Law (laws underlying K3, Government Regulations), Basic public health regulations, Pre-work health checks, After-work checks) Work environment (Environment physical and non-physical work), work safety (influencing factors, sources of danger, prevention of work accidents, work safety equipment) K3 organization (purpose and organizational goals and objectives of the K3 organization), insurance (basic principles, types and claims insurance, BPJS)

Reference

- 1. Budi Harijanto, K3 teaching module, 2012
- 2. Law no. 1 of 1970 concerning work safety
- 3. Law no.13 of 2003 concerning employment
- 4. Law no.3 of 1992 (Social security for workers)
- 5. PP no. 33 of 1977
- Tresnaningsih, Erna (2008). Occupational Health and Safety. Secretary General of the
- 6. Indonesian Ministry of Health. Available from; http://www.depkes.go.id.
- accessed on March 2008.

Subject	:	Religion		
Course Code	:	RTI21	2001	
Credits / Hour	:	2 Crea	lits (2 Hours per Week)	
Semester	:	2		
Graduate Learning Outcomes	:	S1	Fear of God Almighty and able to show religious attitude.	
		S2	Upholding human values in carrying out duties based on religion, morals and ethics.	
		S 5	Respect the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.	
		S6	Working together and having social sensitivity and concern for society and the environment.	
		S8	Internalize academic values, norms, and ethics.	
		KU2	Able to demonstrate independent, quality and measurable performance.	
Course Learning Outcomes	:	Showing religious attitude and piety to God Almighty; Be able to explain the relationship between humans and God; Able to explain human relations by upholding human values and respecting cultural diversity, religious views, beliefs, and other people's opinions; Be able to explain the relationship between humans and the environment; Able to present the results of studies related to human relations with God, fellow humans, and the environment both individually and in groups by prioritizing values, norms, ethics both religious and academic.		
Subject	:			
Human Relations with environment	Human Relations with God, Human Relations with others, Human Relations with the environment			
Reference	:			
1. Al-Qur'an and al-Had	lit	h;		
2. Abdul Chalim, et al. Islamic Religious Education Book, State Polytechnic of Malang.				





3.	Quraih Shihab, Doing	g F	Business with Allah, Jakarta: Lantern of the Heart, 2008		
4.	Quraish Shihab, Heart Lantern, Bandung: Mizan, 2008				
5.	Muhammad 'Alawi al-Maliki, Understandings that Must Be Corrected, Yogyakarta: Student Library, 2013				
	2000000 200100 J, 2010				
Su	bject	:	Mathe	ematics 2	
Co	urse Code	:	RTI21	2002	
Cr	edits / Hour	:	2 Cred	lits (4 Hours per Week)	
Se	mester	:	2		
Gr Ou	aduate Learning Itcomes	:	S8	Internalize academic values, norms, and ethics.	
			S 9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.	
			KU2	Able to demonstrate independent, quality and measurable performance.	
Co Ou	urse Learning atcomes	:	Mastering the concept of sets, relations, functions, matrices and solving systems of equations (linear and non-linear); Able to solve mathematical problems independently with responsibility and pay attention to academic values, norms and ethics		
Su	bject	:			
Set	Sets, Relations, Functions, Matrices and Solving Systems of Equations (Linear and Non-Linear)				
Re	Reference :				
1	1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013				
 Munir, Rinaldi "Discrete Mathematics Ed. 5th Revision". Informatics Bandung. 2012 					
2.				enlares Dai e al revision , informates Danaang, 2012.	
		+			
		-			
Su	hiect	•	Englie	h 2	
Co	ursa Cada	•	RTI21	2003	
	adita / Hour	•	2 Cucc	lits (A Hours par Weak)	
Cr	euits / Hour	ŀ	2 Cred	nis (4 mours per week)	
Sel	mester	ŀ	L		
Gr Ou	aduate Learning atcomes	:	S8	Internalize academic values, norms, and ethics.	
			PP6	Mastering knowledge of oral and written communication techniques using national and international languages.	
			KU2	Able to demonstrate independent, quality and measurable performance.	
			KU11	Able to communicate using international languages orally and in writing.	





Co	ourse Learning	:	Master	ring knowledge of oral and written communication techniques			
0ι	itcomes		using	English in the context of			
			Inform	natics Engineering; Able to communicate using English orally			
			and i	n writing in the context of Informatics Engineering			
			(progr	amming, databases, computer security, electronic publishing,			
			E-Con	nmerce, Recent Development on Information Technology);			
			Able t	o convey opinions, arguments, questions, and answers using			
			Englis	h in discussion activities or academic presentations			
			indepe	ndently by prioritizing academic values, norms, and ethics			
Su	bject	:					
To Gr	pic 1: Programming ammar Study: Describ	(S ir	Stages 1g obje	in Programming, Flowcharting, Programming Language, cts and their functions, Describing Process, and Reporting			
Sc	reen Messages), Topic	2:	Databa	ase (Database Basics, Grammar Study: Expressing Certainty,			
Us	ing If-Clause, Data F	r	ocessing	g, Data Storage and Backup), Topic 3: Computer Security,			
Co	mputer Threats, Gram	m	ar Stu	dy: Simple Past Tense, Computer Crime, Grammar Study:			
An	alyzing Problems and	[]	Their S	olutions, and Writing Short Reports), Topic 4: Electronic			
Pu	blishing(Electronic Pu	ıb	ishing,	Grammar Study: Expressing Agreement/Disagreement, The			
Inf	initives), Topic 5: E-C	on	nmerce	(E-commerce Types, E-commerce Features, Grammar Study:			
Ad	verbs of Quantities, I	liı	nking V	Words (and, so, or, but), Online Transaction, Transaction			
Se	curity), Topic 6: Reco	en	t Deve	lopment on Information Technology (Current Changes in			
Int	eractions, Recent Dev	el	opment	s in Computing, Grammar Study: Future Tense, Making a			
Su	mmary of an Article)						
Re	ference	:					
1.	Asri, Atiqah Nurul. 20 published yet.)1	8. Engl	ish for Informatics 2: Fifth Edition. The module has not been			
2.	2. Esteras, Santiago Remacha. (2010). Infotech English for Computer Users Workbook.						
3.	3. Esteras, Santiago Remacha. (2011). Infotech English for Computer Users Student's Book.						
	Fabre Flena Marco a	n	1 Esters	sky 17655. As Santiago Remacha (2007) Professional English in Use			
1	ICT Cambridge: Car	111 1	ridge University				
Т.	Pross	10.	liuge O	mversity			
	Glandinning Eric Ha	n	1 MoEv	van John (2012) Pasia English for Computing Pavised and			
5.	Undated Oxford: Oxf	(d Univ	ersity Press			
	Uilla David (2012)	.01 	aliah f	uisity 11058.			
6.	2. Essex: Pearson Edu		tion Li	mited.			
7	Hills, David. (2012). I	En	glish fo	or Information Technology Vocational English Course Book			
/.	2. Essex: Pearson Edu	ICa	tion Li	mited.			
Su	bject	:	Opera	ting system			
Course Code		:	RTI21	2004			
Credits / Hour		:	2 Cree	lits (4 Hours per Week)			
Semester		:	2				
C-	advata Lacurina	:					
Gr Ot	aduate Learning	•	S8	Internalize academic values, norms, and ethics.			
			GA	Demonstrate a responsible attitude towards work in the field			
			S 9	of expertise independently.			





				PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.			
				KU2	Able to demonstrate independent, quality and measurable performance.			
Course Learning Outcomes				Mastering basic ICT knowledge regarding operating systems, processes, scheduling, synchronization, memory, I/O; Be able to explain the work mechanism of process management in the operating system, the working mechanism of memory management in the operating system, the working mechanism of memory and I/O management in the operating system in the form of tasks with full responsibility and prioritizing academic values, norms and ethics.				
	Su	bject	:					
	Ba	sic Concepts of Operat	in	g Syste	ms, Processes, Scheduling, Synchronization, Memory, I/O			
	Re	ference	:					
	1.	MDGR, Introduction	to	Compu	tter Operating Systems, 2006			
	2.	Tannenbaum, Andrew	' S	. Mode	ern Operating Systems, Issue 4, Pearson Education, 2015.			
	3.	Satllings, William, Int Hall, 2012.	ter	nal Op	erating Systems and Design Principles, 7th Edition, Prentice			
	4.	Iwan Binanto, Operati	ing	g Systei	m, 2005.			
	Subject							
	Su	bject	:	Softwa	are engineering			
	Su Co	bject urse Code	:	Softwa RTI21	are engineering 2005			
	Su Co Cr	bject urse Code edits / Hour	::	Softwa RTI21 2 Crea	are engineering 2005 lits (4 Hours per Week)			
	Su Co Cr Sei	bject urse Code edits / Hour nester	: : :	Softwa RTI21 2 Crec 2	are engineering 2005 lits (4 Hours per Week)			
	Su Co Cr Se Gr Ou	bject urse Code edits / Hour nester aduate Learning tcomes	::	Softwa RTI21 2 Crec 2 S8	are engineering 2005 lits (4 Hours per Week) Internalize academic values, norms, and ethics.			
	Su Co Cr Se Gr Ou	bject urse Code edits / Hour nester aduate Learning tcomes	:	Softwa RTI21 2 Crec 2 S8 S9	are engineering 2005 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently.			
	Su Co Cr Sei Gr Ou	bject urse Code edits / Hour nester aduate Learning tcomes		Softwa RTI21 2 Crea 2 S8 S9 PP1 PP2	are engineering 2005 Hits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the science development methods to provide the			
	Su Co Cr Se Gr Ou	bject urse Code edits / Hour nester aduate Learning tcomes		Softwa RTI21 2 Crec 2 S8 S9 PP1 PP2 KU2	are engineering 2005 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains. Able to demonstrate independent, quality and measurable			
	Su Co Sei Gr Ou Co	bject urse Code edits / Hour nester aduate Learning tcomes urse Learning tcomes		Softwa RTI21 2 Crec 2 S8 S9 PP1 PP2 KU2 Master develo softwa tools f using t design and pa	are engineering2005Iits (4 Hours per Week)Internalize academic values, norms, and ethics.Demonstrate a responsible attitude towards work in the field of expertise independently.Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.Mastering ICT product development methods to provide the right solutions through one or more application domains.Able to demonstrate independent, quality and measurable performance.ring the concepts of software engineering, software pment life cycle (SDLC), UML and basic testing (testing) in re development (ICT products); able to operate supporting for software development; Able to make software designs he principles of software development life cycle (SDLC) and the required tests with full responsibility and independently y attention to academic values, norms and ethics.			





Introduction to RPL, Systems Engineering, Software Models, Software Requirements Analysis, Software Design, SDLC, Software Implementation and UML, Use Case Diagrams, Activity + Sequence Diagrams, Class Diagrams, White Box and Black Box Testing, Testing in terms of Integration, Validation, and System Testing

Reference

1	Ian Sommerville.	2015,	Software	Engineering,	10th Edition,	Pearson

:

- 2 William R. King, 2015, Planning for Information Systems, Routledge.
- ³ Sprague, RH and McNurlin, BC, Information Systems Management in Practice, 5th edition, Prentice-Hall, 2002.
- 4 Ward, J et al., Strategic Planning for Information Systems Practice, 2nd edition, Wiley, 1996

	Su	bject	:	Datab	ase		
	Co	urse Code	:	RTI21	2006		
	Cr	edits / Hour	:	2 Crea	Credits (4 Hours per Week)		
	Sei	nester	:	2			
	Gr Ou	aduate Learning tcomes	:	S8	Internalize academic values, norms, and ethics.		
				S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
				PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.		
				PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains.		
				KU2	Able to demonstrate independent, quality and measurable performance.		
Course Learning Outcomes			:	Mastering concepts and development methods on databases; Able to design relational databases with independent, correct and quality performance by taking into account academic values, norms and ethics;			
	Su	bject	:				
	Da nor	tabase concept, relation malization, SQL lang	na gu	l databa age, D	use, data modeling, ERD, relational model mapping, database DL language, DML language, Select language (filtering, t join sub query)		
	Re	ference	5a	ing, se			
	1. Elmasry, R. and S. Navathe, 2016, Fundamentals of Database Systems, 3nd edition, Addison Wesley.						
	2.	2. Andrew J. Oppel, 2010, Databases Demystified, McGraw-Hill/Osborne.					
	3.	Fathansyah, 2015, Ba	sic	: Data I	Base, Bandung Informatics.		
		• • •					
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Subject	:	Datal	base Practicum	
Course Code	:	RTI2	12007	
Credits / Hour	•	2 Cre	edits (4 Hours ner Week)	
Somostor	•	2 010		
Graduate Learning	•	2 58	Internalize academic values norms, and ethics	
Outcomes	•	50	internatize academic values, norms, and curies.	
		S9 KK	Demonstrate a responsible attitude towards work in the field of expertise independently.	
		1	(Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).	
		KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.	
		KU2	Able to demonstrate independent, quality and measurable performance.	
Course Learning Outcomes	:	Able to demonstrate independent and responsible performance in designing database designs using ERD or normalization correctly and with quality according to database standards and implementing designs that have been made into the MySQL DBMS by taking into account academic values, norms and ethics; Able to use data modeling software in designing databases; Able to manage database using SQL language:		
Subject	:			
Database software (DBM implementation, Select in query)	1S np	b), data lemen	a modeling software, DDL language implementation, DML tation (filtering, shorting, grouping, aggregating, set, join, sub	
Reference	:			
1 Elmasry, R. and S. Nav . Wesley.	va	the, 20	16, Fundamentals of Database Systems, 3nd edition, Addison	
2 Andrew J. Oppel, 2010),	Databa	ases Demystified, McGraw-Hill/Osborne.	
3 Fathansyah, 2015, Bas	Fathansyah, 2015, Basic Data Base, Bandung Informatics.			
Subject	:	Algor	rithms And Data Structures	
, Course Code	:	RTI2	12008	
Credits / Hour	:	2 Cre	edits (4 Hours per Week)	
Semester	:	2	(





C	uaduata Laguning	۱.	60	Tutomoline and anio values, normal and othics
	raduate Learning	:	30	internalize academic values, norms, and ethics.
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
			KU2	Able to demonstrate independent, quality and measurable performance.
Course Learning Outcomes		•	Maste Objec Sortir Tree, struct proble acade	ering the concept of algorithms and data structures such as et, Array of Object, Bruteforce, Divide-Conquer, Searching, ng, Queue, Stack , Single Linked List, Double Linked List, Graph; Able to solve simple problems that require data ure concepts and choose the right data structures according to ems independently and with full responsibility and prioritize mic values, norms and ethics
Su	ıbject	:		
Se Fi	arching, Sorting, Queu rst Search, Breadth Firs	e, t S	Stack Search	, Linked List, Tree, Graf, Bruteforce, Divide-Conquer, Depth
Re	eference	:		
1	Goodrich, MT, Tamass Algorithms in Java 6th	sia E	ı, R., 8 dition	camp; Goldwasser, MH 2014. Data Structures & MH 2014. Data Structures & Composition
2	Ramadhani, C. 2015. E Andi Publisher	3a	sic Alg	gorithm and Data Structure with Java Language. Yogyakarta:
3	Nugroho, A. 2008. Alg Publisher	goi	rithms	and Data Structures in Java Language. Yogyakarta: Andi
4	U . A D 2007 D		C.	
. 5	Hariyanto, B. 2007. D	at A	a Strue	cture. Bandung: Informatics
5	Publisher	vı,	æann	, Anawa, IK 2018. Data Structure. Togyakarta. Andi
6	Kadir, A. Theory and Publisher	A	pplicat	tion of Data Structures Using Java. 2015. Yogyakarta: Andi
Su	ıbject	:	Pract	icum Algorithms and Data Structures
Co	ourse Code	:	RTI2	12009
Cı	redits / Hour	:	2 Cre	edits (4 Hours per Week)
Se	Semester		2	
Gi Oi	Graduate Learning Outcomes		S8	Internalize academic values, norms, and ethics.
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
			KK 1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision -





		_				
				graphics, embedded , Information Systems, Intelligent		
				systems, Business Intelligence, etc).		
			KU1	Able to apply logical, critical, innovative, quality, and		
				measurable thinking in carrying out specific work in their field		
				of expertise and in accordance with work competency		
				standards in the field concerned.		
			KU2	Able to demonstrate independent, quality and measurable performance.		
	Course Learning	:	Able	to apply algorithm concepts and data structures such as		
	Outcomes		Searc	hing, Sorting, Queue, Stack, Linked List, Double Linked List,		
			Tree,	Divide and Conquer, Graph using the Java programming		
			langu	age; Able to create good and quality simple programs with full		
			respo	nsibility and promote academic values, norms and ethics.		
	Subject	:	-	· · · · · ·		
	General in a Genetica Orace		Q4 - 1-	Link Hit Too Cof Dot for Divit Common Dout		
	First Search, Breadth Firs	e, t S	Stack	Linked List, Tree, Graf, Bruteforce, Divide-Conquer, Deptn		
	Reference	:				
	1 Goodrich, Michael T. 7 Edition John Wiley &	Гa ar	massia	a, Roberto. Data Structures & amp; Algorithms in Java 4th		
+	2 Nugrobo Adi 2008 A	1	orithn	as and Data Structures in the Iava Language Andi		
	Z Nugrono, Adi. 2008. A	15	çormini	is and Data Structures in the Java Language. Andi-		
+	2 I OgyaKaita.					
	J Haniarmaa Damiarma ?	0	07 D-	te Structure Information Dublish en Dandun e		
+	Hariaynto, Bambang, 2007, Data Structure, Informatics Publisher-Bandung.					
	 / Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi . Publisher 					
	Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi					
+	. rublisher					
	9 N.D. IDE L. C.		1.0			
	. NetBeans IDE Java Ou	NetBeans IDE Java Quick Start Tutorial (https://netbeans.org)				

Subject		Inter	face Design		
Course Code		RTI2	RTI213001		
Credits / Hour	:	2 Cre	edits (4 Hours per Week)		
Semester	:	3			
Graduate Learning Outcomes		S8	Internalize academic values, norms, and ethics.		
		S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
		PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.		
		KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.		
		KU2	Able to demonstrate independent, quality and measurable performance.		





Course Learning Outcomes			Mastering interface design concepts in the ICT field, namely Introduction to IMK, Human Factors, Variety of Dialogues, Input Output Devices, Display Design, Ergonomic Aspects, Evaluation Techniques; Able to make good and quality interactive interface designs with full responsibility and pay attention to values, norms and ethics.			
Sul	oject	:				
Intr	oduction to Human	г	ind C	omputer Interaction, Human Factors, Various Dialogues,		
Inte	eractive Tools, Makin	g	Display Worksheets and Display Semantic Nets, Storyboards and			
Pro	totyping, Ergonomic A	4s	pects,	Interface Design Evaluation Techniques.		
Ref	ference	:				
1.	Schneiderman, Ben. (Computer Interaction	(19 1, 3	998). I 3/E. Ao	Designing the User Interface: Strategies for Effective Human- ddison-Wesley.		
2.	Santosa I. (2004), Hu Yogyakarta	m	an and	computer interaction, theory and practice, Andi Offset,		
_						
		-				
0	• •		01	4- M		
Sul	oject	÷	Qual	12002		
Co	urse Code	:	KII2	13002		
Cre	edits / Hour	:	2 Cre	edits (4 Hours per Week)		
Ser	nester	:	3			
Gr Ou	aduate Learning tcomes	:	S6	Working together and having social sensitivity and concern for society and the environment.		
			S8	Internalize academic values, norms, and ethics.		
			S10	Internalize the spirit of independence, struggle and entrepreneurship.		
			KU2	Able to demonstrate independent, quality and measurable performance.		
Co Ou	urse Learning tcomes	:	Students are able to analyze globalization and its impact; develop self-qualifications (initiatively, creatively, and innovatively); build an effective work team, so that they can solve problems properly; apply the principles of a Quality Management System (QMS) to organizations/companies according to international standards			
Sul	oject	:				
Glo	balization, Self-devel	op	ment a	and organization, Introduction to quality.		
Ref	ference	:				
1.	Entrepreneurship & Q 2007.	Qu	ality N	Aanagement System Skill Development Program, Bandung,		
2.	Foster. 2001. Managi	ng	g Qual	ity, an Interactive Approach. Prentice Hall		
3.	3. Gitlow, Howard S. 2001. Quality Management System: A Practical Guide. Florida USA: CRC Press LLC.					
4. Kawase, T. 2001. Human Tokyo: Asian Productivity			an Cer vity Oı	ntered Problem Solving: The Management Of Improvement. ganization		
1						
Sul	oject	:	Artif	icial intelligence		
Co	Course Code		RTI2	13003		





Credits / Hour	:	2 Cre	dits (4 Hours per Week)	
Semester	:	3		
Graduate Learning Outcomes	:	S8	Internalize academic values, norms, and ethics.	
		S9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
		PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.	
		PP4	Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.	
		KK 1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).	
		KK 4	Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.	
		KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.	
		KU2	Able to demonstrate independent, quality and measurable performance.	
Course Learning Outcomes : Able to understand Problem Solving, Knowledge Represent Expert Systems, Natural Language Processing, Uncertainty, H Logic, Neural Networks, Searching, Planning (C2); Under various kinds of artificial intelligence algorithms and application to solve problems in various fields; Able to an appropriate artificial intelligence techniques to solve problems			to understand Problem Solving, Knowledge Representation, rt Systems, Natural Language Processing, Uncertainty, Fuzzy r, Neural Networks, Searching, Planning (C2); Understand us kinds of artificial intelligence algorithms and their reation to solve problems in various fields; Able to analyze priate artificial intelligence techniques to solve problems with esponsibility and ethics:	
Subject	:			
Introduction to Artificial Intelligence, (Reasoning) : Fuzzy tsukamoto, sukamoto, mamdani ,(Problem Solving) : Breadth-First Search, Depth-First Search, Best-First Search, Hill Climbing, A*, (Knowledge Representation) : Introduction to Knowledge representation, Agent, (Knowledge Representation) : Forwards and Backward Chaining, (Knowledge Representation) : Uncertainty Bayes theorem, (Machine Learning/JST) : Introduction to Supervised, Unsupervised and Reinforcement Learning, Perceptron + application examples, perceptron, Deep Learning, (Machine Learning/ ANN) : Decision Tree, Machine Learning/ANN): Evolutionary Algorithm Genetic Algorithm, (NLP): Introduction.				
Reference	:			
1. Artasanchez, A, Josh Packt Publishing	i,]	P. 202	0. Artificial Intelligence with Python, Second Edition. UK:	
2. Harris C, Michael, 20)1	l, Arti	ficial Intelligence. Marshall Cavendish Benchmark	

3. Joshi, P. 2017. Artificial Intelligence with Python. UK: Packt Publishing





4.	Norvig, Peter, 2014, Paradigms of Artificial Intelligence Programming: Case Studies in					
	Common L1sp.	-	1			
Sul	niect	:	Web	Design & Programming		
Co	urse Code	:	RTI2	13004		
Cre	edits / Hour	:	3 Cre	dits (6 Hours per Week)		
Ser	nester	:	3			
Gra	aduate Learning	:	S8	Internalize academic values, norms, and ethics.		
Ou	tcomes					
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently		
		-	PP2	Mastering ICT product development methods to provide the		
				right solutions through one or more application domains.		
			KK 1	Able to apply applied mathematics, computational knowledge		
			1	science, and engineering principles in the fields of software		
				development (desktop, web and mobile), computer networks		
				and other ICT / science and technology fields (vision -		
				graphics, embedded, Information Systems, Intelligent		
			VII1	Able to apply logical critical innovative quality and		
			KUI	measurable thinking in carrying out specific work in their field		
				of expertise and in accordance with work competency		
				standards in the field concerned.		
			KU2	Able to demonstrate independent, quality and measurable		
Co	urse Learning	:	Able	to make an attractive interface design: Able to distinguish static		
Ou	tcomes		web a	nd dynamic web; Able to distinguish dynamic applications on		
			the us	er side and server side; Able to create applications using PHP,		
			MySQL Database, jQuery and AJAX with full responsibility and			
Sul	niect	•	eunes			
Intr	oduction to Internet a	nd	Web	Design HTML CSS Java Scrint JOuery PHP Programming		
Fur	damentals, Form Pro		essing	and Form Upload, Cookies, Session and Mysql, Database		
Pro	gramming in PHP, Mu	ılt	iuser I	Login and Report, Datatables, AJAX, Bootstrap, Web Hosting		
Ref	ference	:				
1.	Responsive Web Des using the latest HTM	ig L:	n with 5 and 0	HTML5 and CSS: Develop future-proof responsive websites CSS techniques, 3rd Edition		
2.	Jason Beaird, The pri	nc	iples o	of Beautiful Web Design		
3.	Rian Ariona, Learn H	[T	ML ar	d CSS (Fundamental Tutorial on learning HTML and CSS)		
4.	Adi Hadisaputra, HT	M	L and	CSS Fundamentals from Roots to Leaves		
5.	John Duckett,HTML	ar	nd CSS	S design and build websites		
6.	Glenn Johnson, Progr	aı	nming	in HTML 5 with Javascript and CSS 3		
7.	Desrizal, Javascript Guide					
8.	Tutorials Point Simpl	y	Easy I	Learning, Java Script Language		
9.	Jonathan Caffer and I Web development wi	Ka th	rl Swe simpl	edberg, Learning Jquery 1.3 (Better Interaction Design and e Jawa Script Techniques)		
10			p1	-r ·		
	Andre Pratama, PHP Uncover – PHP Learning Guide for beginners					





11	Endy Muhardin PHP Programming Fundamentals and MySal Fundamentals				
. 12	Endy Muhardin, I III Trogramming Fundamentars and Mysqi Fundamentars				
	Bootstrap Tutorial (Simply Easy Learning by Tutorials.com)				
~ .	•				
Sul	oject	:	Adva	nced Database	
Co	urse Code	:	RT12	13005	
Cr	edits / Hour	:	2 Cre	dits (4 Hours per Week)	
Ser	nester	:	3		
Gr Ou	aduate Learning tcomes	:	S8	Internalize academic values, norms, and ethics.	
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains.	
			KK 1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).	
			KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.	
			KU2	Able to demonstrate independent, quality and measurable	
Co	urse Learning	:	Unde	rstand Transact SQL - Select, Data Type, Built In Function,	
Ou	tcomes		Sub Q Value Opera relation transa and p	Query, Table Expression (View, Scalar Function, Inline Table Function, Derived Table, Common Table Expression), Set itor, Window Rank, Pivoting, Stored Procedure, non database onal. Able to apply logical and critical thinking in using action SQL and stored procedures appropriately, responsibly, rioritizing academic ethics, values, and norms.	
Sul	oject	:			
Re ^N Ser dat Exj Ag SQ	ReView Database, Introduction to SMBD, Installation and configuration of Microsoft SQL Server., Introduction to Transact-SQL and the SELECT Statement. Join, Sorting, and Filtering data.,Data types, and Built-in Functions,Subquery, Grouping, and Aggregating,Table Expressions,Set and Trigger Operations,SQL Windowing: Function, Ranking, Offset, & Aggregate,Pivot and Groupping Sets ,Query against Metadata,Stored Procedure and dynamic SQL,T-SQL programming and error handling,Introduction to NoSQL,NoSQL				
Re	ference	:			
1.	Microsoft Press, Quer	ry	ing Mi	crosoft® SQL Server® 2012, 2012	
2.	Microsoft Press, Adm	nir	nisterir	ng Microsoft® SQL Server® 2012, 2012	





<u> </u>		1				
~ .	-	-	3.5.41	2		
Subject		:	Math			
Course Code		:	RTI2	13006		
Cre	edits / Hour	:	2 Cre	2 Credits (4 Hours per Week)		
Semester		:	3			
Gra	aduate Learning	:	S8	Internalize academic values, norms, and ethics.		
Ou	tcomes					
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.		
			KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.		
			KU2	Able to demonstrate independent, quality and measurable performance.		
Course Learning Outcomes		:	Able to read and understand general formulas, understand the concept of mean, median mode, know the definition of Graph, Tree and Vector; able to understand and solve mathematical problems / mathematical models in accordance with case studies given with full responsibility and prioritizing academic values, norms and ethics.			
Subject		:				
General formula case study 1, General formula case study 2, Introduction to Statistics (data, mean, median, mode), Graphs, Trees, Introduction: Scalars and Vector Quantities, Vector Representation, Components of a Given Vector, Vector Spaces, Cosine Directions, Scalar Product of Two Vectors, Vector Product of Two Vectors, Angle Between Two Vectors, Ratio of Directions, Eigenvalues and Eigenvectors, Case study of general formula 3, Case study of general formula 4						
Ref	ference	:				
1.	Stroud, KA and Dext	er	J., En	gineering Mathematics, Palgrave Macmillan, 2013		
2.	Munir Rinaldi "Disc	ere	ete Ma	thematics Ed. 5th Revision" Informatics Bandung 2012		
				alemates Eureen recusion , mormates Banaang, 2012.		
Sul	oject	:	Obje	ct Based Programming		
Co	urse Code	:	RTI2	13007		
Credits / Hour		:	2 Cre	edits (4 Hours per Week)		
Semester		•	3			
Graduate Learning		:	S8	Internalize academic values, norms, and ethics.		
Ju			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth		
		-				





Course Learning Outcomes		:	Master Inheri and Ja struct princi value	ering the concepts of OOP, Class and Object, Encapsulation, itance, Abstraction, Polymorphism, GUI, database (JDBC), ava API; Able to understand the difference between OOP and ural; Able to design applications using OOP concepts and ples with full responsibility and taking into account academic s, norms and ethics.			
Subject		:					
Object Oriented Progra Polymorphism, Abstract C to Java API			nming Concepts, Class, Object, Encapsulation, Inheritance, ass, Interface, Introduction to GUI and database (JDBC), Introduction				
Referenc	e	:					
1. Horst Netw	mann, CS, & Co ork Circle, Sant	ori a (nell, G Clara:	. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Prentice Hall.			
2. Horst Edition	mann, CS, & Co on. Network Cire	ori cle	nell, G e, Sant	. (2008). Core Java Volume II–Advanced Features, Eighth a Clara: Prentice Hall.			
3. Ricky Offse	vanto, I. (2005). t.	0	bject-(Driented Programming Basics with Java 2. Yogyakarta: Andi			
		-					
Subject		:	Obje	ct-Based Programming Practicum			
Course C	Code	:	RTI2	13008			
Credits /	Hour	:	2 Cre	dits (4 Hours per Week)			
Semester	•	:	3				
Graduate Outcome	e Learning s	:	S8	Internalize academic values, norms, and ethics.			
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.			
			KK 1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).			
			KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.			
			KU2	Able to demonstrate independent, quality and measurable performance.			
Course Learning Outcomes		:	Master Inherr and J based logica based into a	Mastering the concepts of OOP, Class and Object, Encapsulation Inheritance, Abstraction, Polymorphism, GUI, database (JDBC) and Java API; able to understand the difference between object based programming and structural programming; Able to appl logical and critical thinking in making applications based on object based programming principles with full responsibility and takin into account academic values, norms and ethics.			
Subject		:					





 OOP concept, class and object, encapsulation, class relation, inheritance, polymorphism, abstract class, interface, Java Basic Programming, introduction to GUI, introduction to Java API.

 Reference
 :

 1
 Horstmann, CS (2018). Core Java Volume I–Fundamentals, Eleventh Edition. Network

- 1. Circle, Santa Clara: Prentice Hall.
- 2. Horstmann, CS (2019). Core Java Volume II–Advanced Features, Eleventh Edition. Network Circle, Santa Clara: Prentice Hall.

3.	Rickyanto, I. (2005). Offset	Object-(Oriented Programming Basics wi	th Java 2.	Yogyakarta: A	Andi

Subject		:	Citizer	ıship			
Course Code		:	RTI21	RTI214001			
	Credits / Hour		:	2 Cred	2 Credits (4 Hours per Week)		
	Sem	ester	:	4			
	Grac Outo	luate Learning comes	:	S 3	Contributing to improving the quality of life in society, nation, state, and the advancement of civilization based on Pancasila.		
				S4	Act as a citizen who is proud and loves the motherland, has nationalism and a sense of responsibility to the state and nation.		
				S 5	Respect the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.		
				S6	S6 Working together and having social sensitivity and conce for society and the environment.		
				S7 Obey the law and discipline in the life of society and state.			
				S8	S8 Internalize academic values, norms, and ethics.		
				KU2	Able to demonstrate independent, quality and measurable performance.		
	Cou	rse Learning	:	Able to	o understand the real contribution that can be made to the		
	Outo	comes		progress of the nation by becoming citizens who have a spirit of nationalism and love for the motherland; Able to work together in group as a representation of social life by respecting diversit differences of opinion, and applying existing norms and ethics; Ab to master the application of the concept of citizenship to becom law-abiding citizens, disciplined, and able to work independently accordance with Pancasila values.			
	Subj	ect	:				
	Natio	onal Identity, State a	nd	Constit	tution, State and Citizen Relations, State Law, Democracy,		
	Hum	Human Rights, Archipelagic Outlook, National Resilience, National Integration.					
	Refe	rence	:				





1.	1. UPT MKU-Malang State Polytechnic, 2016. Citizenship Education, , Aditya Media Publishing, Malang.			ytechnic, 2016. Citizenship Education, , Aditya Media			
2.	Azra Azyumardi, Prof.Dr, Human Rights Democracy and Civil Society, Prenata Media. Jakarta, 2003.						
_	Bertrand Russel, History of Western Philosophy and its Connection Political and Social						
3.	Circumstances from the present day, (edited by Kamdani), History of Western Philosophy and its relation to socio-political conditions from ancient times to the present, Student Library vogyakarta 2004						
	Bintoro Tjokroamin	ot	o, Prof.	MA. Introduction to Development Administration, LP3ES			
4.	Jakarta, 1985		,	1			
5.	Desi Fernanda, Drs.	N	I.Soc.So	c. Ethics of Government Organizations, LAN. Jakarta, 2003.			
6.	Inu Kencana Syafiie, Drs. M.Sc. Indonesian Government System, Rineka Cipta. Jakarta, 2002.						
7.	Idup Suhady, National Insight in the Unitary State of the Republic of Indonesia, Nationa Competitiveness and Character Building, LAN. Jakarta, 2003						
8.	Kaelan, MS (editor), Citizenship Education for Higher Education, Paradigm. Jakarta, 2002.						
9.	Suparlan Al Hakim,	Ν	ISi, Citi	zenship Education for Higher Education, UM PRESS, 2002.			
10.	LEMHANAS, Nus	an	tara Ou	tlook, PT Ismoyojati. Jakarta, 1995			
11.	Anthology of National Resilience (conception and theory) I, PT Ripres Utama.						
1.0	Jakarta, 1980.						
12.	Amended 1945 Constitution						
Sub	iast	•	Object	t Oriented Analysis And Design			
Sub	ject urse Code	:	Object RTI21	t Oriented Analysis And Design 4002			
Sub Cou	ject irse Code dits / Hour	:	Object RTI21 2 Crea	t Oriented Analysis And Design 4002 lits (4 Hours per Week)			
Sub Cou Cre	iject 1rse Code dits / Hour	:	Object RTI21 2 Crec 4	t Oriented Analysis And Design 4002 lits (4 Hours per Week)			
Sub Cou Cre Sen Gra	ject Irse Code dits / Hour iester	:	Object RTI21 2 Crec 4 \$8	t Oriented Analysis And Design 4002 lits (4 Hours per Week)			
Sub Cou Cre Sen Gra Out	ject irse Code idits / Hour iester iduate Learning icomes	::	Object RTI21 2 Crec 4 S8	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics.			
Sub Cou Cre Sen Gra Out	iject irse Code dits / Hour nester nduate Learning tcomes	:	Object RTI21 2 Crec 4 S8 S9	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field			
Sub Cou Cre Sen Gra Out	ject urse Code dits / Hour nester nduate Learning tcomes	:	Object RTI21 2 Crec 4 S8 S9	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently.			
Sub Cou Cre Sen Gra Out	ject irse Code dits / Hour nester iduate Learning tcomes	•	Object RTI21 2 Crec 4 S8 S9 PP1	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT			
Sub Cou Cre Sen Gra Out	ject Irse Code dits / Hour nester nduate Learning tcomes		Object RTI21 2 Crec 4 S8 S9 PP1	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases,			
Sub Cou Cre Sen Gra Out	ject irse Code idits / Hour nester iduate Learning tcomes		Object RTI21 2 Crec 4 S8 S9 PP1	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and			
Sub Cou Cre Sen Gra Out	ject urse Code dits / Hour nester nduate Learning tcomes		Object RTI21 2 Crec 4 S8 S9 PP1	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.			
Sub Cou Cre Sen Gra Out	ject irse Code dits / Hour nester iduate Learning tcomes		Object RTI21 2 Crec 4 S8 S9 PP1 PP2	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the			
Sub Cou Cre Sen Gra Out	ject irse Code dits / Hour nester nduate Learning tcomes		Object RTI21 2 Cred 4 S8 S9 PP1 PP2 KU2	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains.			
Sub Cou Cre Sen Gra Out	ject Irse Code dits / Hour nester nduate Learning tcomes		Object RTI21 2 Crec 4 S8 S9 PP1 PP2 KU2	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains. Able to demonstrate independent, quality and measurable performance.			
Sub Cou Cre Sen Gra Out	ject irse Code idits / Hour nester iduate Learning fcomes		Object RTI21 2 Crea 4 S8 S9 PP1 PP2 KU2 Able to	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains. Able to demonstrate independent, quality and measurable performance.			
Sub Cou Cre Sen Gra Out	ject irse Code dits / Hour nester iduate Learning comes irse Learning comes		Object RTI21 2 Crec 4 S8 S9 PP1 PP2 KU2 Able to object-	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains. Able to demonstrate independent, quality and measurable performance.			
Sub Cou Cre Sen Gra Out	ject irse Code irse Code idits / Hour nester iduate Learning icomes irse Learning icomes		Object RTI21 2 Crec 4 S8 S9 PP1 PP2 KU2 Able to object- make s	t Oriented Analysis And Design 4002 lits (4 Hours per Week) Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. Mastering ICT product development methods to provide the right solutions through one or more application domains. Able to demonstrate independent, quality and measurable performance.			





			responsibility and pay attention to academic values, norms, and ethics: Able to apply various UML diagram models used in the				
			process of developing ICT products independently.				
Sub	iect	:					
Don	Domain Modeling, Use Case Modeling, Activity Diagrams, State Machine Diagrams						
Rob	ustness Analysis. Se	au	ience D	jagrams, Interaction Overview Diagrams, Class Diagrams,			
Dep	loyment Diagrams, D)es	sign Pat	terns.			
Ref	erence	:					
	Use Case Driven Ob	oie	ct Mod	eling with UML (Dough Rosenbergh and Matt Stephens) -			
1.	2007	J -		······································			
2.	Software Engineerin	ıg	(Ian So	mmerville) - 2003			
3.	Object Oriented De	si	gn with	UML and Java (K. Barclay and J. Savage) - 2004			
4.	Systems Analysis a Wixom) - 2013	nd	Design	with UML (David Tegarden, Alan Dennis, Barbara Haley			
Sub	ject	:	Comp	utational Statistics			
Cou	irse Code	:	RTI21	4009			
Cre	dits / Hour	:	2 Cred	lits (4 Hours per Week)			
Sen	nester	:	4				
Gra	duate Learning	:	S8	Internalize academic values, norms, and ethics.			
Outcomes							
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.			
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases,			
				computer networks, etc.), engineering science, engineering principles in the ICT field in depth.			
			PP4	Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical			
				proof) to generate effective alternative solutions in denth			
		-	KK4	Able to utilize intelligent computing in the process of solving			
				problems based on analysis and information on ICT			
				products.			
			KU2	Able to demonstrate independent, quality and measurable			
				performance.			
Course Learning		:	Able to	master the basic concepts of statistics and knowledge in the			
Outcomes			fields of forecasting, clustering, and classification in depth, taking				
			into account values, norms and academic ethics; Able to implement				
			the co	ncept of computational statistics to solve problems with			
			effectiv	ve, quality, and measurable solutions; Able to determine the			
			approp	riate method of computational statistics to solve problems			




			based of	on analysis carried out independently and with a responsible
			attitude	2.
Sub	ject	:		
Initi	al concept of statistic	cs,	Freque	ncy distribution; Statistical measures, probability (including
perr	nutation combination	ıs,	and r	aive bayes), discrete probability distribution, continuous
prob	bability distribution,	pa	arameter	r sampling and estimation, hypothesis testing, analysis of
vari	ance, correlation regr	es	sion, clu	ustering and classification with SPSS, forecasting.
Ref	erence	:		
1.	Walpole, Ronald E. & amp; Scientists, 10	R)tł	aymond 1 Edition	H. Myers, 2016, Probability & amp; Statistics for Engineers n, Prentice-Hall Inc.
2.	Gentle, James E, Heidelberg London	20 No)02,El ew Yorl	ements of Computational Statistics, Springer Dordrecht
3.	Gentle, James E. Ha and Methods, Spring	rd ve	le W. M r Berlin	fori Y, 2004. Handbook of Computational Statistics-Concept Heidelberg New York
4.	Gentle, James E, Heidelberg London	2(N)09, El ew Yorl	ements of Computational Statistics, Springer Dordrecht
5.	Martinez, Wendy L MATLAB, CHAPM DC	.] [A	Martine N &am	z, Angel R, 2002, Computational Statistics Handbook with p; HALL/CRC, Boca Raton London New York Washington,
6.	Santoso Singgih, 2007, Complete Guide to Mastering Statistics with SPSS 17, Elex Media Komputindo Indonesia			
7.	Suharjo, B. 2013. Applied Statistics Accompanied by Application Examples with SPSS. Science House			
8.	Santoso Singgih, 20 Komputindo Indone	16 sia	i, Comp a	lete Guide to Mastering Statistics with SPSS 23, Elex Media
9.	Spiegel, MR Stepher ed. Erlangga Publish	ns nei	, LJ 199 :	9. Schaum's Outlines of Theory and Statistical Problems, 3rd
ĺ				
Sub	ject	:	Projec	t1
Cou	rse Code	:	RTI21	4004
Cre	dits / Hour	:	3 Cred	lits (6 Hours per Week)
Sen	lester	:	4	
Gra	duate Learning	:	S 5	Respect the diversity of cultures, views, religions and
Out	comes	ľ		beliefs, as well as the opinions or original findings of others.
1		t	S6	Working together and having social sensitivity and concern
				for society and the environment.
		1	S8	Internalize academic values, norms, and ethics.
			S9	Demonstrate a responsible attitude towards work in the field
				of expertise independently.
			PP2	Mastering ICT product development methods to provide the
				right solutions through one or more application domains.





	PP	3 Mastering documentation techniques and quality assurance of ICT products.
	PP	 Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT
	PP	6 Mastering knowledge of oral and written communication
		techniques using national and international languages.
	K	(1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
	Kŀ	2 Able to identify and analyze needs, design, realize and test
	.	ICT / science and technology products.
		Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products
	Kŀ	Able to manage resources in the form of time, human resources, costs for developing ICT / science and technology products by utilizing project management software
	KI	1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
	KI	2 Able to demonstrate independent, quality and measurable performance.
	KU	5 Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.
	KI	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.
	KU	8 Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.
	KU	10 Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).
Course Learning Outcomes	: Abl mod Abl con and imp	e to apply the concept of requirements engineering and its leling with logical, critical, quality thinking as a form of solution; e to identify and analyze needs, as well as apply software design cepts using UML appropriately based on standard procedures design specifications; Able to apply the concept of software lementation by paying attention to resource management in the





			form o of soft perform togethe	f time, human resources, and costs; Able to apply the concept ware testing as a form of ICT product quality assurance, and n documentation on each development process; Able to work er in building software that is not too complex by applying
			softwa paving	re engineering principles with a responsible attitude and attention to academic values, norms, and ethics.
Sub	oject	:	P=,8	
Sub	mission of project ide	eas	s, Deter	mination of project scope, Requirements exploration, System
desi	gn, Implementation,	Ге	sting.	
Ref	erence	:		
1.	Ian Sommerville, 20)1(6, Softw	are Engineering, 10th Edition, Pearson
2.	Roger S. Pressman,	20	010, Sof	tware Engineering 7th Edition, Higher Education
Sub	oject	:	busine	ss intelligence
Cou	ırse Code	:	RTI21	4005
Cre	dits / Hour	:	3 Cred	lits (6 Hours per Week)
Sen	nester	:	4	
Gra Out	iduate Learning tcomes	:	S8	Internalize academic values, norms, and ethics.
			S 9	Demonstrate a responsible attitude towards work in the field of expertise independently.
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
			PP7	Mastering knowledge about technological developments and the latest issues (ethical, social, legal and economic) related to the ICT field.
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
			KK6	Able to use the latest technology related to the field of ICT / science and technology to present information technology solutions.
			KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.





			KU2	Able to demonstrate independent, quality and measurable
Carr		-	<u> </u>	performance.
Cou Out	rse Learning		Able to	ts and components in depth taking into account technological
Jui	comes		develo	pments and the latest issues related to the ICT field: Able to
			design	a data warehouse structure by applying logical, critical.
			quality	, and measurable thinking; Able to carry out ETL data
		:	process	ses from several data sources to a data warehouse database
			that has	s been designed independently with a responsible attitude and
			pays at	ttention to academic norms and ethics; Able to use tools to
			visuali	ze data as a solution for problem solving analysis; Able to
			apply k	knowledge of the basic concepts of data warehouse and ETL
			in softv	vare development.
Sub	ject	:		
Data	Warehouse Fundame	en	itals, ET	L Concepts & Components, Data Warehouse Solutions, Data
War	ehouse Schema Des	ig	n, ETL	Logic Execution (SQL Server Integration Services), ETL
Logi	c Execution Automa	ti	on (SQI	L Server Agent), Complex ETL Logic Design (SQL Server
Data	Tools), Control Fl	ov	v & Da	ata Flow, Advanced Tasks, Variables and Event Handler,
Extr	acting Data Source &	: I	Load to]	Dimension Table, Transform, Load to Fact Table, Multi-type
Data	Source, Visualizatio	n	1	
Refe	erence	:		
1.	Sebesta, Robert, 201 Wesley, Publ.	6.	. Concej	pt of programming languages global edition, Addison
2.	Sestoft, Peter, 2017.	P	rogramı	ning Language Concepts, Springer, Publ.
3.	T. Henny Febriana H Deepublish.	ła	rumy, 2	016. Learning Basic Algorithms and C++ Programming,
4.	Rinaldi Munir, 2015	, /	Algorith	m and Programming, Informatics Publisher
Sub	ject	:	Comp	uter network
Cou	rse Code	:	RTI21	4006
Cre	dits / Hour	:	2 Cred	lits (4 Hours per Week)
Sem	ester	:	4	
Gra	duate Learning	:	S8	Internalize academic values, norms, and ethics.
Out	comes			
			S9	Demonstrate a responsible attitude towards work in the field
				of expertise independently.
			PP1	Mastering the concepts of applied mathematics, basic ICT
				knowledge (Algorithms, Programming, Databases,
				computer networks, etc.), engineering science, and
				engineering principles in the ICT field in depth.
			PP2	Mastering ICT product development methods to provide the
				right solutions through one or more application domains.





			KU2	Able to demonstrate independent, quality and measurable
				performance.
Cou	rse Learning	:	Able to	master the concept of Computer Networks in the field of ICT
Out	comes		in dep	th; Able to master the method in the process of network
			commu	inication; Able to apply the concept of Computer Network
			indepen	ndently, quality, measurable, and with a responsible attitude;
			Able	to use assistive devices in implementing network
			commu	unication by taking into account academic values, norms, and
			ethics.	
Sub	ject	:		
Netv	vork Communication	, I	Protocol	, Model, Address, Application Layer, Application Protocol,
Tran	sport Layer, Networl	K I	Layer, I	Pv4, Subnetting, Data Link Protocol, Physical Layer.
Refe	erence	:		
1	James F. Kurose &a	m	p; Keith	n Ross, "Computer Networking : A Top-Down Approach
1.	Featuring the Internet	et'	'Addiso	on-Wesley, 2011
2	Cisco Systems, Inc.'	' (CCNA E	Exploration I : Network Fundamentals". Indianapolis: Cisco
۷.	Press, 2007			
Sub	ject	:	Comp	uter Network Practicum
Cou	rse Code	:	RTI21	4007
			201	
Cre	dits / Hour	:	3 Cred	lits (6 Hours per Week)
Cree Sem	dits / Hour ester	:	3 Cred	lits (6 Hours per Week)
Cree Sem Gra	dits / Hour ester duate Learning	: : :	3 Cred 4 \$8	Internalize academic values, norms, and ethics.
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 \$8	Internalize academic values, norms, and ethics.
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 \$8 \$9	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 88 89	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently.
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 \$8 \$9 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational
Cree Sem Gra Out	dits / Hour ester duate Learning comes	::	3 Cred 4 88 89 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases),
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 88 89 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 88 89 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile),
Crea Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 88 89 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology
Cree Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 \$8 \$9 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems,
Crea Sem Gra Out	dits / Hour ester duate Learning comes		3 Cred 4 88 89 KK1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc).
Cred Sem Gra Out	dits / Hour ester duate Learning comes		3 Cred 4 \$8 \$9 KK1 KU1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and
Crea Sem Gra Out	dits / Hour ester duate Learning comes	:	3 Cred 4 88 89 KK1 KU1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their
Cred Sem Gra Out	dits / Hour ester duate Learning comes		3 Cred 4 \$8 \$9 KK1 KU1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency
Crea Sem Gra Out	dits / Hour ester duate Learning comes		3 Cred 4 \$8 \$9 KK1 KU1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
Cred Sem Gra Out	dits / Hour ester duate Learning comes		3 Cred 4 \$8 \$9 KK1 KU1	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable
Cree Sem Gra Out	dits / Hour ester duate Learning comes		4 58 59 KK1 KU1 KU2	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable performance.
Cree Sem Gra Out	dits / Hour ester duate Learning comes		4 S8 S9 KK1 KU1 KU2 Able to	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable performance.
Crea Sem Gra Out	dits / Hour ester duate Learning comes		4 S8 S9 KK1 KU1 KU2 Able to the pro	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable performance. master the concept of computer networks; Able to carry out cess of identifying Network Hardware, Cabling, Configuring
Crea Sem Gra Out	dits / Hour ester duate Learning comes rse Learning comes		4 S8 S9 KK1 KU1 KU2 Able to the pro IP, DN	Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded , Information Systems, Intelligent systems, Business Intelligence, etc). Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable performance. master the concept of computer networks; Able to carry out cess of identifying Network Hardware, Cabling, Configuring S, FTP and Remote Service, Netstat-nmap, PING & Route,





			and qua	ality thinking in accordance with competency standards; Able
			to perf	form Network Design Analysis and Router Configuration by
			taking	into account academic values, norms and ethics; Able to use
			assistiv	ve devices in implementing computer network concepts
			indepen	ndently and with a responsible attitude.
Sul	oject	:		
Net	work Hardware Ident	ifi	cation,	Cabling, Config IP, DNS, FTP and Remote Service, Netstat-
nm	ap, PING & Route, Su	br	etting,	Traceroute, ARP, Wireless, Network Design Analysis, Router
Co	nfig.			
Re	ference	:		
1	James F. Kurose &	Ke	eith Ros	s, "Computer Networking : A Top-Down Approach
1.	Featuring the Internet	eť'	' Addiso	on-Wesley, 2011
2.	Cisco Systems, Inc. ³ Press, 2007	" (CCNA E	Exploration I : Network Fundamentals". Indianapolis: Cisco
	Raphael Hertzog &	R	oland M	as, "The Debian Administrator's Handbook": Freexian,
3.	October 2015.			. , , ,
Sul	oject	:	Advan	ced Web Programming
Co	urse Code	:	RTI21	4008
Cr	edits / Hour	:	3 Cred	lits (6 Hours per Week)
Ser	nester	:	4	
Gr	aduate Learning	:	S8	Internalize academic values, norms, and ethics.
Ou	tcomes			, ,
			S9	Demonstrate a responsible attitude towards work in the field
				of expertise independently.
			PP2	Mastering ICT product development methods to provide the
				right solutions through one or more application domains.
			KK1	Able to apply applied mathematics, computational
				knowledge (Algorithms, Programming and Databases),
				engineering science, and engineering principles in the fields
				of software development (desktop, web and mobile),
				computer networks and other ICT / science and technology
				fields (vision - graphics, embedded, Information Systems,
				Intelligent systems, Business Intelligence, etc).
			KU1	Able to apply logical, critical, innovative, quality, and
				measurable thinking in carrying out specific work in their
				field of expertise and in accordance with work competency
				standards in the field concerned.
			KU2	Able to demonstrate independent, quality and measurable
			KU2	Able to demonstrate independent, quality and measurable performance.
Co	urse Learning	:	KU2 Able to	Able to demonstrate independent, quality and measurable performance.





			develop critical based a academ	pment tools in the form of a Web Framework with logical, , and measurable thinking; Able to make quality website- applications, with a responsible attitude, and pay attention to nic values, norms, and ethics.
Sub	ject	:		
Basi	ic Web Framework, N	41	/C, Aut	hentication, Object Relational Mapping (ORM), CRUD and
RES	STful API.			
Refe	erence	:		
1.	Muhammad Azamu artisans Kungfu Ko	dd di	in, Hafi	d Mukhlasin, 2019. Laravel the PHP framework for web
2	Laravel Documentat	in	n - https	s://laravel.com/docs/8 x
2.	Deals Deer 2016 I	10		A Count Learnel
3.	Dayle Rees, 2016. L	ar	avei: Co	ode Smart. Leanpub

Subject	:	Techno	opreneurship		
Course Code		RTI215	RTI215001		
Credits / Hour	:	2 Cred	its (4 Hours per Week)		
Semester	:	5			
Graduate Learning Outcomes	:	S6	Working together and having social sensitivity and concern for society and the environment.		
		S8	Internalize academic values, norms, and ethics.		
		S10	Internalize the spirit of independence, struggle and entrepreneurship.		
		KK2	Able to identify and analyze needs, design, realize and test ICT / science and technology products.		
		KU2	Able to demonstrate independent, quality and measurable performance.		
Course Learning Outcomes	:				
Course Learning Outcomes		Able to entrepro type of entrepro behavio able to as well the fiel profess	b improve student competency in independent and quality eneurship; Able to work together to design a place of business, business, marketing plan, implement, initiate and develop eneurship with a fighting spirit; Able to understand the or of an entrepreneur who has values, norms, and ethics; Being find out the driving factors for the development of a business, as knowing the success and failure stories of entrepreneurs in d, thus encouraging students to pursue the entrepreneurial ion with social sensitivity.		
Subject	:				
Introduction to Digital E Feasibility analysis of D Business models in DE, C	En DE Gi	treprene ideas, uide to c	eurship (DE), Identification of DE opportunities and Ideas, Marketing and sales in DE, Financial management in DE, reating a business plan in DE, Validation of business models		





1 F	DE, Innovation of business models in DE, Legal Aspects and Intellectual Property in Business used Growth Strategy.						
T	Dafononao	•					
	Reference Barringer BR & Ir	• •	nd D	D (2016) Entrepreneurshin Successfully Launching New			
	Ventures, Fifth Globa	al E	Edition.				
2 Osterwalder, A., & Pigneur, Y. (2010). E visionaries, game changers, and challengers.				Y. (2010). Business model generation: a handbook for l challengers. John Wiley & Sons.			
	McGrath, Rita; and Ia	n l	Mac M	illan. (2000). The Entrepreneurial Mindset : Strategies form			
	3 Continuously Creating	дO	pportu	nity in an Age of Uncertainty. Harvard Business School Press,			
	Cambridge, MA						
	Baron, Robert. (199	Baron, Robert. (1998). Cognitive Mechanisms in Entrepreneurship: Why and When					
1	Entrepreneurs Think I	Dif	ferently	y than Other People.			
	Coviello, Nicole E ;	and	d Mari	an V Jones. (2004). Methodological Issues in International			
	Entrepreneurship Reso	ear	ch.				
S	Subject	: F	Project	2			
(Course Code	: F	RTI215	5002			
(Credits / Hour	: 3	6 Credi	its (6 Hours per Week)			
S	Semester	: 5	5				
(Graduate Learning	:	S5	Respect the diversity of cultures, views, religions and beliefs,			
(Dutcomes			as well as the opinions or original findings of others.			
			S6	Working together and having social sensitivity and concern			
				for society and the environment.			
			S8	Internalize academic values, norms, and ethics.			
			S9	Demonstrate a responsible attitude towards work in the field			
				of expertise independently.			
			PP2	Mastering ICT product development methods to provide the			
				right solutions through one or more application domains.			
			PP3	Mastering documentation techniques and quality assurance			
				of ICT products.			
			PP5	Mastering knowledge about quality assurance and			
				occupational safety and health (K3) principles in ICT			
				product development.			
			PP6	Mastering knowledge of oral and written communication			
				techniques using national and international languages.			
			KK1	Able to apply applied mathematics, computational			
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases),			
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields			
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile),			
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology			
			KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems,			





	KK2	Able to identify and analyze needs, design, realize and test
		ICT / science and technology products.
	KK3	Able to document and carry out quality assurance in every
		process of development, use, modification, maintenance and
		security of ICT / science and technology products
	KK5	Able to manage resources in the form of time, human
		resources, costs for developing ICT / science and technology
		products by utilizing project management software
	KUI	Able to apply logical, critical, innovative, quality, and
		field of expertise and in accordance with work competency
		standards in the field concerned
	KII2	Able to demonstrate independent quality and measurable
		performance.
	KU3	Able to study cases of the application of science and
		technology that pay attention to and apply humanities values
		according to their field of expertise in order to produce
		prototypes, standard procedures, designs or works of art,
		compile the results of their studies in the form of working
		papers, design specifications, or art essays, and upload them
		on the website College.
	KU4	Able to compile the results of application case studies in the
		area of expertise possessed in the form of working papers,
		design specifications, or art essays, and upload them on the
	VII5	college website.
	KU5	Able to make appropriate decisions based on standard
		security requirements in supervising and evaluating work
	KU6	Able to maintain and develop a network of cooperation and
		the results of cooperation within and outside the institution.
	KU7	Able to be responsible for the achievement of group work
		results and supervise and evaluate the completion of work
		assigned to workers who are under their responsibility.
	KU8	Able to carry out the process of self-evaluation of work
		groups under their responsibility, and able to manage
		learning independently.
	KU10	Able to recognize needs, adapt and demonstrate ability to
		continue self-development (lifelong learning).
Course Learning	: Able to	apply software engineering principles and software project
Outcomes	manage	which includes proposal preparation project planning
	softwar	which includes proposal preparation, project plaining,
	user de	liverv
Subject	:	





Formation of project group A, preparation of project proposal A, evaluation of proposals and design of product A, evaluation of results of implementation of product A, evaluation of results of implementation and testing of product A, evaluation of product results A, formation of groups and preparation of project proposals B, evaluation of project proposals B, evaluation progress of Product B (design), Evaluation of the progress of product B implementation (Version Control System + prototype), Evaluation of progress and implementation of product B (product), Evaluation of progress (testing), Evaluation of Product B results + peer assessment **Reference**

1. Shit, Daniel. 2012. Needs Analysis in Software Engineering. Yogyakarta: Andi.

2. Heryanto, Priest., Triwibowo, Totok. 2013. Information Technology-Based Project Management. Bandung: Informatics.

3. Tantara, Rudy. 2012. Information System Project Management. Yogyakarta: Andi.

Subject	:	Mobile	Programming
Course Code	•	R1121;	
Credits / Hour	•	5 Crea	us (o Hours per week)
Semester	:	3	T / 1' 1 ' 1 1 / 1'
Graduate Learning Outcomes	:	58	Internalize academic values, norms, and ethics.
		S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
		PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains.
		KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
		KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
		KU2	Able to demonstrate independent, quality and measurable performance.
Course Learning Outcomes	•	Able to to mast solution and cr accordi	understand programming concepts on mobile devices; Able ther ICT product development methods to provide the right is through mobile-based applications; Able to apply logical itical thinking in developing mobile-based applications ing to the various case studies given; Able to use mobile-based





			applica	tion development tools independently with a responsible
			attitude	e, and still pay attention to academic values, norms, and ethics.
Su	ıbject	:		
In	troduction to Mobile P	ro	grammi	ng Using Flutter, Case Study of Simple Mobile Project Quiz
A	oplication, Case Study	of	f Simple	e Mobile Project Expense Manager, Case Study of Adaptive
U	Mobile Project, Case	S	tudy of	Project Mobile with Multiple Screen, Case Study of Project
Sh	op App, Case Study of	P :	roject v	vith native android features.
R	eference	:		
1.	Flutter & Dart - The C	Co	mplete	Guide [2021 Edition]
	(https://www.udemy.o	20	m/cours	se/learn-flutter-dart-to-build-ios-android-apps/)
2.	lessandria, S. (2020).	Fl	utter Pr	rojects: A practical, project-based guide to building real-
	world cross-platform	m	obile ap	oplications and games. Packt Publishing Ltd.
3.	Biessek, A. (2019). F	lu	tter For	Beginners An Introductory Guide to Building cross-platform
	Mobile Applications	wi	th Flutt	er and Dart 2. Packt Publishing Ltd.
4.	Napoli, ML (2019). I	3e	ginning	g Flutter A Hands On Guide To App Development.
	https://doi.org/10.100	<u>)2</u>	/978111	19550860
C	1. /		N.T. 1.	T •
Su	ibject	:	Machi	ne Learning
C	burse Code	:	KTI2I	5004
Ci	redits / Hour	:	3 Cred	its (6 Hours per Week)
Se	emester	:	5	x ,
G	raduate Learning	:	88	Internalize academic values, norms, and ethics.
U	utcomes		C0	
			89	Demonstrate a responsible attitude towards work in the field
				· · · · · · · · · · · · · · · · · · ·
			1/1/1	of expertise independently.
			KK1	of expertise independently. Able to apply applied mathematics, computational language (Algorithms, Programming, and Database)
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases),
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desitor web and mahile)
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision graphics embedded Information Systems
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems Business Intelligence, etc)
			KK1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical innovative, quality and
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency
			KK1 KK4	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
			KK1 KK4 KU1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable
			KK1 KK4 KU1	of expertise independently. Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products. Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. Able to demonstrate independent, quality and measurable performance.





C	ourse Learning	: Abl	e to understand the basic concepts and various methods of
Oi	itcomes	Mao logi com ana resp mao nor	hine Learning; Able to apply Machine Learning methods with cal and critical thinking as a form of utilizing intelligent puting in the process of solving problems based on the results of yzes that are carried out independently, measurably, and with a onsible attitude; Able to use assistive devices to implement hine learning methods by taking into account academic values, ns and ethics.
Su	bject	:	
an Ve Ar	d Multiple Linear Recetot Machine, Artific alysis.	gressic	n, Logistic Regression, Naive Bayes, Decision Tree, Support ral Network, Ensemble Method, K-means, Principal Component
Re	eference	:	
1.	Konnor Cluster. (201 and TensorFlow (Inc	9). Pyt ludes a	hon Machine Learning: A Step-by-Step Guide to Scikit-Learn Python Programming Crash Course). Kindle
2.	Hacking, G. (2017).	Master	ng Machine Learning with scikit-learn. Packt Publishing Ltd.
3.	Müller, air condition Python: a guide for d	ing &a ata sci	np; Guido, S. (2016). Introduction to machine learning with entists. " OReilly Media, Inc.;.
4.	Swamynathan, M. (2 implementation guid	019). N e to pre	Iastering machine learning with python in six steps: A practical dictive data analytics using python. Apress.

L						
	Subject	:	Softwa	re Testing		
	Course Code	:	RTI215	RTI215005		
	Credits / Hour	:	2 Cred	its (4 Hours per Week)		
	Semester	:	5			
	Graduate Learning	:	S8	Internalize academic values, norms, and ethics.		
	Outcomes					
			S9	Demonstrate a responsible attitude towards work in the field		
				of expertise independently.		
			PP1	Mastering the concepts of applied mathematics, basic ICT		
				knowledge (Algorithms, Programming, Databases, computer		
				networks, etc.), engineering science, and engineering		
				principles in the ICT field in depth.		
			PP2	Mastering ICT product development methods to provide the		
				right solutions through one or more application domains.		
			PP3	Mastering documentation techniques and quality assurance		
				of ICT products.		
			PP5	Mastering knowledge about quality assurance and		
				occupational safety and health (K3) principles in ICT		
				product development.		





			KK1	Able to apply applied mathematics, computational
				knowledge (Algorithms, Programming and Databases),
				of software development (desktop web and mobile)
				computer networks and other ICT / science and technology
				fields (vision - graphics, embedded, Information Systems,
				Intelligent systems, Business Intelligence, etc).
			KK3	Able to document and carry out quality assurance in every
				process of development, use, modification, maintenance and
				security of ICT / science and technology products
			KU2	Able to demonstrate independent, quality and measurable
Co	urse Legrning		Able to	master the concents and methods of testing software in denth
	itcomes	•	as a for	m of quality assurance/quality of ICT products: Able to make
			docum	entation and carry out quality assurance in every process of
			develop	bing, using, modifying, and maintaining ICT/IPTEKS
			product	ts independently with a responsible attitude; Able to use
			support	ing software to create software testing scenarios
			automa	tically as the right solution through one or more application
			domain	s; Able to analyze software testing in a measurable manner
			by takin	ng into account academic values, norms and ethics.
Su	bject	:		
So	ftware Testing Flow, S	50	ftware T	Testing Methods, Software Testing Planning, Test Cases, Test
Sc	enarios, Automatic So	ftv	ware Tes	sting, Software Testing Results Reporting.
Re	eference	:		
1.	Myers, GJ; Sandler, C Sons, Hoboken and M). JJ	& Badg	ett, T. (2012), The art of software testing, John Wiley &
2.	Sommerville, I. (2016	5).	Softwa	re Engineering, 10th edition. Essex: Pearson.
2	IEEE Computer Socie	ety	y. (2014). SWEBOK, Guide to the Software Engineering Body of
5	Knowledge version 3	.0	•	
Su	bject	:	Indone	sian
Co	ourse Code	:	RTI21	5006
Cr	edits / Hour	:	2 Cred	its (4 Hours per Week)
Se	mester	:	5	
Gi Oi	aduate Learning	:	58	Internalize academic values, norms, and ethics.
		1	PP6	Mastering knowledge of oral and written communication
				techniques using national and international languages.
		T	KU2	Able to demonstrate independent, quality and measurable
				performance.
			KU9	Able to document, store, secure, and retrieve data to ensure
				validity and prevent plagiarism.





Co	urse Learning	: Able to	master the Indonesian language, both official and unofficial,	
Ou	Outcomes independently, qualified and measurable; Able to use Indonesian			
		the nati	onal language for oral and written communication by taking	
		into ac	count academic values, norms and ethics; Able to apply	
		insights	s about the Indonesian language in making job applications,	
		writing	scientific papers, as well as job interviews and presentations.	
Su	bject	:		
Ins	ights about the Indones	ian langu	age, official and unofficial language, Indonesian spelling and	
eff	ective sentences, Writin	ng forma	l and telephonic short messages, Writing job applications and	
job	interviews, Presentat	ions, Sc	ientific writing (research proposals, theses, and scientific	
arti	icles), Quoting , Resear	ch propo	sal writing, Self-editing.	
Re	ference	:		
1.	Ramadhani, Rizki Putr	ri. 2019.	Indonesian for Business and Industry. Malang: Polinema	
	Press.			
2.	Ministry of Education	and Cult	ure of the Republic of Indonesia. 2001. Big Indonesian	
	Dictionary. Jakarta: Ba	alai Pusta	ka.	
3.	HP Achmad and Alek.	2016. In	donesian for Higher Education: Substance of Study and Its	
	Application. Jakarta: E	Erlangga	Publisher.	
4.	Kasali, Rhenald. 2006	. Making	Successful Presentations. Jakarta: PT Gramedia Pustaka	
	Utama.			
5	Ministry of Education	and Cult	ure. 2016. General Guidelines for Indonesian Spelling.	
5.	Jakarta: Language Dev	velopmer	and Development Agency.	
6.	Trim, Bambang. 2017.	200+ Sc	cript Editing and Publishing Solutions. Jakarta: Earth Script.	





Subject		:	Management information System				
Course Code		:	RTI215	5007			
Cr	edits / Hour	:	2 Cred	its (4 Hours per Week)			
Se	mester	:	5				
Gi Ot	aduate Learning stcomes	:	S8	Internalize academic values, norms, and ethics.			
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.			
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.			
			PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains.			
			KU2	Able to demonstrate independent, quality and measurable performance.			
Course Learning Outcomes			: Able to master the concepts of systems, information systems, management information system life cycle in depth; Able to understand the role of information systems to support businesses and organizations by keeping abreast of today's developments in the modern world of organizations and businesses to provide the right solutions through one or more application domains; Able to apply management information system concepts independently and measurably taking into account academic values norms and ethics				
Su	bject	:					
Introduction to Management Information Systems, System Concepts, Information Concernation Processing, Information System Design, E-business and E-commerce, E-commerce, and E-payment, M-Commerce, Databases, Evolution and Application of Computer-ba Information Systems, Impact IT usage.			rmation Systems, System Concepts, Information Concepts, on System Design, E-business and E-commerce, E-commerce Databases, Evolution and Application of Computer-based age.				
Re	eference	:					
1.	MRob, Peter and Core Management. Massac	or us	iel, Carl sset : Th	os. 2008. Database Systems: Design, Implementation, and omson Course Technology, 2008.			
2.	Stair, Raphlh, Reyno Edition. sl : Thomson	ld 1 (s, Georg Course 7	ge. 2006. Fundamentals of Information Systems. 3rd Fechnology, 2006.			
Su	Subject		Cloud	Computing			
Co	ourse Code	:	RTI21	5008			
Cr	edits / Hour	:	2 Cred	its (4 Hours per Week)			
Se	mester	:	5				
Gi Ot	Graduate Learning Outcomes		S8	Internalize academic values, norms, and ethics.			





			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
			PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
			PP7	Mastering knowledge about technological developments and the latest issues (ethical, social, legal and economic) related to the ICT field.
			KK6	Able to use the latest technology related to the field of ICT / science and technology to present information technology solutions.
			KU2	Able to demonstrate independent, quality and measurable performance.
	Co Ou	urse Learning Itcomes	: Able to depth b and iss machin Availal cloud attitude	o master the concept of cloud computing and its services in by taking into account the latest technological developments ues; Able to use devices in the form of a number of virtual les as a quality and scalable solution, so as to produce High bility infrastructure; Able to apply concepts and solutions in a computing environment independently with a responsible e and pay attention to academic norms and ethics.
\$	Su	bject	:	
	Clo Sto	oud Environments, Clo orage, Container, CI/Cl	ud Servic D, Server	ces ,IaaS, Virtual Cloud Network, PaaS, SaaS, Cloud less Computing, High Availability.
]	Re	ference	:	
	1.	Tomasz, Michal., "Pra	actical Or	acle Cloud Infrastructure", Apress, 2020
	2.	Ramklass, Roopesh. 0 2020	Dracle Inf	rastructure Architect Associate. McGraw-Hill Education,
Ť				

Subject	:	Job P	reparation English			
Course Code	:	RTI21	RTI216001			
Credits / Hour	:	2 Cree	2 Credits (4 Hours per Week)			
Semester	:	6				
Graduate Learning Outcomes		S8	Internalize academic values, norms, and ethics.			
		PP6	Mastering knowledge of oral and written communication techniques using national and international languages.			
		KU2	Able to demonstrate independent, quality and measurable performance.			
		KU1 1	Able to communicate using international languages orally and in writing.			
Course Learning	:	Able	to read and understand job advertisements;			
Outcomes		Able to	o understand the words used in job advertisements;			





		Able to mention and explain the strengths and weaknesses						
		possessed;						
		Able to read and understand how to make a job application letter;						
		Able to write a job application letter;						
		Able to read and understand how to make a Curiculum Vitae;						
		Able to write Curriculum Vitae;						
		Able to read and understand how to conduct a test interview and its						
		kinds;						
		Able to practice test interviews:						
		Able to read and understand how to make an effective presentation;						
		Able to practice effective presentations;						
		Able to understand how to do TOEIC ® questions;						
		Able to practice the TOEIC ® test;						
Subject	:							
Reading Job Advertisem	Reading Job Advertisement							
1.1 Assessing Yourself 1	.2.	Parts of Job Advertisement 1.3. Questions to Ask Yourself after						
Reading Job Ads 1.4. Terms and Abbreviations Usually Found in Job Advertisement Writing								

a Job Application Letter 2.1. Things to Consider Before Writing A Job Application Letter 2.2. Online Application Letter 2.3. Job Application Letter Template 2.4. Sample of Job Application Letter Writing Curriculum Vitae 3.1. Things to Consider Before Writing a Curriculum Vitae 3.2. Information a CV Should Include 3.3. Curriculum Vitae Template 3.4. Sample of CV Conducting a Job Interview 4.1. Kinds of Job Interview 4.2. Things to Prepare before Having a Job Interview 4.3. Things Supposed to Do on a D Day (of the Job Interview) 4.4. Common Questions Asked by the Interviewer Delivering an Effective Presentation 5.1. Factors Make People Irritated during Presentation 5.2. Things to Consider before Presentation 5.3. Things to Consider in Making Power Point Slides 5.4. Things to Do during Presentation Preparing for TOEIC ® Preparing for Listening Test Preparing for Reading Test Reference : Asri, Atiqah Nurul, et.al. 2018. English for Job Preparation: Fourth Edition. Polynema 1. Press Downes, Colm. 2012. Cambridge English for Job Hunting. Cambridge: Cambridge 2 University Press. Grussendorf, Marion. 2011. Oxford English for Presentations. Oxford: Oxford 3 University Press. Moss, James, Lee, Clayton, and Atkinson, Peter. 2007. Presenting for Success. 4 Business English Pod. Pledger, Path. 2015. Oxford English for Human Resources. Oxford: Oxford University 5 Press. Trew, Grant. 2008. Tactics for TOEIC ® Listening and Reading Strategies. Oxford: 6 Oxford University Press. Subject : Decision Support System : RTI216002 **Course Code** : 2 Credits (4 Hours per Week) **Credits / Hour** : 6 Semester **S8** Internalize academic values, norms, and ethics. : **Graduate Learning Outcomes**





			S 9	Demonstrate a responsible attitude towards work in the field of expertise independently.		
			PP	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.		
			PP	Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.		
			KK	1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).		
			KK	4 Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.		
			KU	1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.		
			KU	2 Able to demonstrate independent, quality and measurable performance.		
	Cour Outc	se Learning omes	: Able SPK Ana ELE Dec: Be a simp that	to understand the concepts and applications of Introduction to , Characteristics and Components of SPK, Weighted Product, ytic Hierarchy Process, Profile Matching, TOPSIS, CTRE, Introduction to Fuzzy, Fuzzy Inference System, Group sion Support System; ble to apply the DSS algorithm that has been taught in a few le case study examples; Be able to design simple applications apply decision support concepts systematically;		
_	Subj	ect	:			
	Introd Hiera Infera	duction to SPK, Ch rchy Process, Profi ence System, Group	aracter le Ma Decisi	stics and Components of SPK, Weighted Product, Analytic tching, TOPSIS, ELECTRE, Introduction to Fuzzy, Fuzzy on Support System.		
_	Refe	rence	:			
_	1	Turban, E., 1995, I	Decisio	n Support and Expert Systems, Prentice Hall		
	2	Iurban, E. Aroson, Jay E. Liang, Ting-Peng., 2007, Decision Support System and Intelligent System Seventh Edition, Prentice Hall, India.				
	3	Shard, Ramesh., Delen, Dursun., Turban E., 2014. Business Intelligence And Analytics System for Decision Support Tenth Edition, Pearson.				
	4	Dyczkowski, Krzys Information The Ca	ztof., 2 se of C	018. Decision Support System Based on Imperfect varian Tumor Diagnosis, Springer.		
	5	Nofriansyah, D., De Systems, Deepublis	elfit, S. h Educ	2017, Multi Criteria Decision Making on Decision Support		
	6	Kusrini, 2016. Cond and AMIKOM	cepts a	ad Applications of Decision Support Systems. Andi Publisher		





7 Basuki, Ari., Cahyani, Andharini D., 2016., Decision Support System, Deepublish Education			
		D' D	
Subject	:	Big D	ata
Course Code	:	RTI2	16003
Credits / Hour	:	3 Cre	dits (6 Hours per Week)
Semester	:	6	
Graduate Learning Outcomes	:	S8	Internalize academic values, norms, and ethics.
		S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
		PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
		PP/	and the latest issues (ethical, social, legal and economic) related to the ICT field.
		KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
		KK6	Able to use the latest technology related to the field of ICT / science and technology to present information technology solutions.
		KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
		KU2	Able to demonstrate independent, quality and measurable performance.
Course Learning Outcomes	•		Able to understand the concept of Big Data, its current needs, trends and relevance; Able to understand professions related to Big Data; Able to understand the architecture, Hadoop ecosystem and its components; Able to understand the concept of MapReduce, install Hadoop, work with HDFS, Hive, Pig, and Spark; Able to select and carry out Data Analytics activities according to the context of the business problems encountered;
Subject	:		
Big data history, Big Data Concept, Trends, and Profession. Big data sources (dataset) Big Dataset Analysis. Basic Hadoop and HDFS. (Big data Technology) Hadoop Architecture and Components. Hadoop installation. Map Reduce Hive & Pig (Basic) Hive & Pig (Advanced). NoSQL database, Apache HBase Apache Sqoop and Flume Modern Data Architecture (Data Lake). Pipeline Data. sparks. Introduction to Big Data Analytics.			





Refe	rence	:			
1.	Nataraj Dasgupta. 2	20	18. "Pra	actical Big Data Analytics".	
2.	Buyya, Rajkumar. Calheiros, Rodrigo N. Dastjerdi, Amir Vahid. 2016."Big Data Principles and Paradigms".				
3.	Morgan Kaufmann. Datasets".	, •	J. Lesco	wee, A. Rajaraman, and J. Ullman, "Mining of Massive	
Subj	ect	:	Resea	rch methodology	
Cour	se Code	:	RTI21	6004	
Cred	lits / Hour	:	2 Crea	lits (4 Hours per Week)	
Seme	ester	:	6		
Grac Outc	luate Learning comes	:	S8	Internalize academic values, norms, and ethics.	
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			PP6	Mastering knowledge of oral and written communication techniques using national and international languages.	
			KU2	Able to demonstrate independent, quality and measurable	
				performance.	
			KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.	
			KU9	Able to document, store, secure, and retrieve data to ensure validity and prevent plagiarism.	
Cour Outc	rse Learning comes	:	Able to Able to Able to Be abl Being Able to Able to Able to Able to measur	 b understand the concept of introductory research; b choose research topics and preliminary studies; b formulate problems and hypotheses; e to choose a research approach; able to choose variables; b determine data sources; c determine and arrange research instruments; c collect data, analyze data, and draw conclusions; co compile research reports in a systematic, quality and rable manner; 	
Subj	ect	:			
Big c Datas Com (Adv Arch	Big data history, Big Data Concept, Trends, and Profession, Big data sources (dataset), Big Dataset Analysis, Basic Hadoop and HDFS (Big data Technology), Hadoop Architecture and Components, Hadoop Installation, Map Reduce, Hive & Pig (Basic), Hive & Pig (Advanced), NoSQL Databases, Apache HBase, Apache Sqoop and Flume, Modern Data Architecture (Data Lake), Data Pipeline, Spark				
Kete	rence	:		· · · · · · · · · · · · · · · · · · ·	
1.	Suhardjono, 1982, research, UPT publ	ica	5 quest ation of	FT UB.	
2.	Suharsimi Arikunto	rc	, Resea	rch Procedure, A Practice Approach.	
3	Suparmoko, M, Pra	ct	ical Re	search Methodology, BPFE, 1999	
2.	Day, R. (1975). How to write a scientific paper. IEEE Transaction on Professional Communication, 41(7), 486-494.				





	Klein, G., Jiang, J., and Saunders, C. (2006). Leading the horse to water.				
4	Communications of the Association for Information Systems, 18(1). Available at:			ciation for Information Systems, 18(1). Available at:	
	http://aisel.aisnet.org/cais/vol18/iss1/13.				
2.	Achmad Arifin, M.Eng [JPTK Editor], Ethics and Code of Ethics of Scientific Writing				
5	Dr. Ade Gafar Abd Program Material, V	ul W	lah, DP riter's C	2M DIKTI Scientific Article Writing Training Stimulus code of Ethics and Writing Ethics in Scientific Articles	
2.	Dr. Sutopo Purwo N Relations of BNPB	Nu) H	igroho, Paper Ei	MSi., APU ; (Head of Information Data Center and Public thics of Scientific Writing.	
6	Setiawan, TOT Mat Ethics for Writing S	tei Sc	rials for	Writing Scientific Papers, 2011, Papers on the Code of Papers	
2.	Umar Khasan, KTI Papers	W	/riting]	Fechnical Workshop, 2019, Ethics of Writing Scientific	
7	Permendiknas No.	17	of 201	0 concerning Prevention and Management of Plagiarism in	
	Figher Education				
Subj	ect	:	Intern	et Of Things	
Cour	rse Code	:	RTI21	6005	
Cred	lits / Hour	:	3 Cred	lits (6 Hours per Week)	
Semo	astar	•	6		
Croc	luata Laarning	•	66	Internalize academic values norms and othics	
Outo	and Learning	•	30	internatize academic values, norms, and ethics.	
Oute			50	Demonstrate a regnonsible attitude towards work in the field	
			33	of expertise independently	
		-	PP1	Mastering the concents of applied mathematics basic ICT	
				knowledge (Algorithms, Programming, Databases,	
				computer networks, etc.), engineering science, and	
				engineering principles in the ICT field in depth.	
			PP2	Mastering ICT product development methods to provide the	
				right solutions through one or more application domains.	
			KK1	Able to apply applied mathematics, computational	
				knowledge (Algorithms, Programming and Databases),	
				engineering science, and engineering principles in the fields	
				of software development (desktop, web and mobile),	
				computer networks and other ICT / science and technology	
				tields (vision - graphics, embedded, Information Systems,	
		-	1717.4	Intelligent systems, Business Intelligence, etc).	
			KK4	Able to utilize intelligent computing in the process of	
				solving problems based on analysis and information on IC I	
		\vdash	KII1	Able to apply logical critical innovative quality and	
			NUI	measurable thinking in carrying out specific work in their	
				field of expertise and in accordance with work competency	
				standards in the field concerned.	
			KU2	Able to demonstrate independent, quality and measurable	
				performance.	
C	· · · · · · · · · · · ·	:	Be abl	e to explain the IoT architecture which consists of device	
Cour	rse Learning		constra	aints, edge computing and IoT cloud computing and how to	
Outcomes			implen	nent them;	





			Able t	o make microcontroller hardware control programs that are
		_	contro	lled locally or remotely (remote control);
Subj	ect	:		
IoT A	Architecture, Microo	cor	ntroller	Unit (Arduino & NodeMCU), Hardware communication
inter	facing (I2C, SPI, UA	AR	T), Edg	ge Computing, IoT Server Cloud, Implementing IoT.
Refe	rence	:		
1.	Arduino Programm	nin	g For E	Beginners, 2019, Jasakom
2.				
		-		
Subi	ect	:	Image	Processing And Computer Vision
Сош	se Code	•	RTI21	6006
Crad	its / Hour	•	3 Cree	lits (6 Hours per Week)
Some		•	6	
Semo		•	0	Texternalize and device relation of the second second
Grad Outc	comes	:	50	internatize academic values, norms, and etnics.
			S9	Demonstrate a responsible attitude towards work in the field
				of expertise independently.
			PP1	Mastering the concepts of applied mathematics, basic ICT
				knowledge (Algorithms, Programming, Databases,
				computer networks, etc.), engineering science, and
		+	DD)	Mastering ICT product development methods to provide the
			112	right solutions through one or more application domains.
			KK1	Able to apply applied mathematics, computational
				knowledge (Algorithms, Programming and Databases),
				of software development (desktop web and mobile)
				computer networks and other ICT / science and technology
				fields (vision - graphics, embedded, Information Systems,
				Intelligent systems, Business Intelligence, etc).
			KK4	Able to utilize intelligent computing in the process of
				solving problems based on analysis and information on ICT
				products.
			KU1	Able to apply logical, critical, innovative, quality, and
				measurable thinking in carrying out specific work in their
				standards in the field concerned
		+	KII)	Able to demonstrate independent quality and measurable
			KU2	performance.
Cour	se Learning	:	Able	to understand techniques for performing operations on
Outo	omes		image	s/images and perform recognition of images/images;
			Able t	o apply techniques to carry out operations on images/images
			and pe	erform image recognition; Able to apply the use of image
			operat	ions to carry out problem solving/projects that use
			image	video data as input data;
Subj	ect	:		





The basics of image processing include image capture, image modeling, and image processing; Introduction to human and computer vision systems, structure of the human eve, adaptation and discrimination of brightness, contrast sensitivity, Weber ratio, Brightness as a function of intensity, mach band patterns, simultaneous contrast, signal time, spatial and spatial temporal, analog and digital, sampling and quantization, image representation, light intensity function. gray level, number of bits and resolution, checkerboard effect and false counting, non-uniform sampling, non-uniform quantization; Image quality improvement: types of image quality improvement techniques, pixel processing, negative images, contrast stretching, thresholding, gray level transformation, gray level slicing, bit plane slicing, histogram equalization, specific equalization histogram, image quality improvement with logical and arithmetic operations.; Image filtering: filtering principles, convolution. ; Noise reduction in images: low pass filter, uniform noise, Gaussian noise, salt n paper noise, speckle noise. ; Image edge detection: high pass filter, robert operator, prewit operator, sobel operator. ; Color image: color concept, color space, color gamut, and color conversion; Extraction of color features in images: understanding image color features, obtaining color histograms, RGB histograms, HSV histograms, CMYK hstograms; Image shape feature extraction: edge detection, projection histogram, angle histogram, LBP, and LTP; Morphology: the notion of image morphology, element structure, dilation, erosion, opening, closing, hit or miss transform, thinning.; Image recognition application projects with color features or shape features: selecting project themes that can be completed by image processing, creating system block diagrams, performing feature extraction, carrying out the matching process, observing

		_			
Refe	rence	:			
1.	Rafael C. Gonzales Prentice Hall, 2010	, F	Richard	E. Woods," Digital Image Processing 3rd edition ",	
2	Rosa Andrie Asma ISBN: 978-602-66	ıra 95	, "Digi 5-90-1,	tal image processing: theory, practice and exercises", Polinema Press 2018	
3	Wanasanan Thong Department of Cor	so np	ngkrit, outer Er	"Lecture Notes Digital Image Processing Chapter 1,2,9", ngineering	
4	Faculty of Enginee	ri	ng Chia	ang Mai University	
5	Prof. Dr. Aniati Mu Fasilkom UI	ur	ni, Dina	a Chahyati, SKom, "Image Processing Lecture Notes",	
6	Achmad Basuki, Nana Ramadijanti, Fadilah Fahrul, "Image Processing Practicum Module With C# 2012", EEPIS-2013				
7	Nana Ramadijanti, EEPIS-2014	A	Achmad Basuki, Fadilah Fahrul, "Image Processing Textbook",		
Subj	ect	:	Frame	ework Based Programming	
Cour	se Code	:	RTI21	6007	
Cred	lits / Hour	:	3 Cree	lits (6 Hours per Week)	
Seme	ester	:	6		
Grac Outc	luate Learning comes	:	S8	Internalize academic values, norms, and ethics.	
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			PP2	Mastering ICT product development methods to provide the right solutions through one or more application domains.	





			KK1	Able to apply applied mathematics, computational knowledge (Algorithms Programming and Databases)
				engineering science, and engineering principles in the fields
				of software development (desktop, web and mobile),
				computer networks and other ICT / science and technology
				fields (vision - graphics, embedded, Information Systems,
				Intelligent systems, Business Intelligence, etc).
			KU1	Able to apply logical, critical, innovative, quality, and
				measurable thinking in carrying out specific work in their
				field of expertise and in accordance with work competency
				standards in the field concerned.
			KU2	Able to demonstrate independent, quality and measurable
				performance.
Cour	se Learning	:	Able t	o understand the concept of mvc in a web framework;
Outc	omes		Able to	o create a website using the codeigniter web framework;
Subj	ect	:		
Instal	ll and configure Cod	ei	gniter 3	and Twitter Bootstrap, Create static pages with CodeIgniter
3, Cr	eate CRUD with Co	de	Igniter	3, Create Authentication with CodeIgniter 3, Create RBAC
(Role	Based Access Cont	rc	oll), Cre	ate Reporting with CodeIgniter 3
Refe	rence	:		
1.	Lonnie Ezell, Pract	ica	al Code	igniter 3. 2016
2.	David Upton, Code	Ig	niter fo	r Rapid PHP Application Development. 2007

Subject	:	Indus	strial Internship 1 (2 months)
Course Code : RTI21		RTI2	17001
Credits / Hour	:	8 Cre	dits (16 Hours per Week)
Semester	:	7	
Graduate Learning Outcomes	:	S8	Internalize academic values, norms, and ethics.
		S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
		PP3	Mastering documentation techniques and quality assurance of ICT products.
		PP5	Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT product development.
		PP6	Mastering knowledge of oral and written communication techniques using national and international languages.
		KK2	Able to identify and analyze needs, design, realize and test ICT / science and technology products.
		KK3	Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products
		KU2	Able to demonstrate independent, quality and measurable performance.





			KU5	Able to make appropriate decisions based on standard				
				procedures, design specifications, occupational safety and				
				security requirements in supervising and evaluating work.				
t			KU6	Able to maintain and develop a network of cooperation and				
			1100	the results of cooperation within and outside the institution				
╈			KU7	Able to be responsible for the achievement of group work				
			KU/	regults and supervise and evaluate the completion of work				
				assigned to workers who are under their responsibility				
+		-	1/110	assigned to workers who are under their responsionity.				
			KUð	Able to carry out the process of self-evaluation of work				
				groups under their responsibility, and able to manage				
+				learning independently.				
			KU1 0	Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).				
1	Course Learning	•	Able t	o recognize adapt and work together with individuals and				
	Outcomes	1	work g	rouns in the corporate environment:				
			able to	identify the company's business functions:				
			be res	ponsible in the process of developing high quality ICT				
			produc	ts according to the stages of ICT product development based				
			on the	specifications of the company's needs. Documenting the				
			proces	ses and results of ICT product development verbally and in				
			writing	writing independently by internalizing academic values, norms and				
			ethics	writing independently by internatizing academic values, norms and				
+	Subject		etilles	ethes				
-	Subject Inter desetion to the energine	•		1				
		ш 4:4	nent an	(when issing a fit any isst descriptions. It arguest design IT				
1	work rules, problem identification/submission of IT project descriptions, IT project design, IT							
	project design presentations, IT project development process, IT project documentation, IT							
	project design presentation	on	is, IT p	roject development process, IT project documentation, IT				
	project design presentation project dissemination, inc	on lu	is, IT p strial in	roject development process, IT project documentation, IT ternship reports				
-	project design presentation project dissemination, inc Reference	on lu :	s, IT p strial in	roject development process, IT project documentation, IT ternship reports				
	project design presentation project dissemination, inc Reference 1 Malang State Polytech	on lu : ni	s, IT p strial in c Indus	roject development process, IT project documentation, IT ternship reports trial Internship Guidelines				
	 project design presentation project dissemination, inc Reference Malang State Polytech . 2 Industrial Internship G 	on lu ini	s, IT p strial in c Indus	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G	on du ini ini	is, IT p strial in c Indus ide D4	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	 project design presentation project dissemination, inc Reference Malang State Polytech Industrial Internship G 	on lui ini iui	is, IT p strial in c Indus ide D4	roject development process, IT project documentation, IT tternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, incomposition of the project dissemination, incomposition of the project dissemination, incomposition of the project dissemination of th	on lui ini iui	is, IT p strial in c Indus de D4	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, income Reference 1 Malang State Polytech 2 Industrial Internship G	on lui ini iui	s, IT p strial in c Indus ide D4	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, inc Reference 1 Malang State Polytech 2 Industrial Internship G . .	on lui ini iui	s, IT p strial in c Indus de D4	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject	on lui ini iui	s, IT p strial in c Indus de D4 Indust	roject development process, IT project documentation, IT ternship reports trial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months)				
	project design presentation project dissemination, inc Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject Course Code	on lui ini iui	s, IT p strial in c Indus de D4 Indust RTI21	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject Course Code Credits / Hour	on lui ini iui iui	s, IT p strial in c Indus ide D4 Indust RTI21 12 Cre	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002 edits (24 Hours per Week)				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 5 Subject Course Code Credits / Hour Semester	on lu ini iui iui	s, IT p strial in c Indus de D4 ide D4 Indust RTI21 12 Cre 7	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic crial Internship 2 (4 months) 7002 edits (24 Hours per Week)				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 4 5 5 5 5 5 5 5 5 5 6 7 6 7 7 7 7 7 7 7 7	on lui ini iui iui	s, IT p strial in c Indus de D4 de D4 Indust RTI21 12 Cro 7 S6	Troject development process, IT project documentation, IT ternship reports Informatics Engineering Malang State Polytechnic Informatics Engineering Malang State Polytechnic				
	project design presentation project dissemination, incomposite disseminatio	on lui ini iui iui i i i i i	s, IT p strial in c Indus ide D4 ide D4 Indust RTI21 12 Cro 7 S6	roject development process, IT project documentation, IT ternship reports trial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment.				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 3 4 5 5 5 5 5 5 5 5 5 5 6 7 6 7 7 7 7 7 7 7	on lu ini iu iu i i i i i i	s, IT p strial in c Indus de D4 de D4 Indust RTI21 12 Crc 7 S6 S8	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics.				
	project design presentation, ind Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject Course Code Credits / Hour Semester Graduate Learning Outcomes		s, IT p strial in c Indus de D4 de D4 Indust RTI21 12 Cro 7 S6 S8 KK2	Troject development process, IT project documentation, IT ternship reports Informatics Engineering Malang State Polytechnic Informatics Engineering Malang State Polytechnic Internship 2 (4 months) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	on lui ini iui iui	s, IT p strial in c Indus ide D4 ide D4 Indust RTI21 12 Cro 7 S6 S8 KK2	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products.				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	on lui ini iui iui	s, IT p strial in c Indus de D4 ide D	roject development process, IT project documentation, IT ternship reports strial Internship Guidelines Informatics Engineering Malang State Polytechnic trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products. Able to document and carry out quality assurance in every				
	project design presentation, ind Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject Course Code Credits / Hour Semester Graduate Learning Outcomes	on lui ini ini iui i i i i i	s, IT p strial in c Indus de D4 de d	Trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products. Able to document and carry out quality assurance in every process of development, use, modification, maintenance				
	project design presentation, ind Reference 1 Malang State Polytech 2 Industrial Internship G 3 Industrial Internship G 4 Subject Course Code Credits / Hour Semester Graduate Learning Outcomes Industrial Learning	on lu ini iui iui	s, IT p strial in c Indus de D4 de de D4 de de d	Trial Internship 2 (4 months) 7002 edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products. Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products				
	project design presentation, ind Reference 1 Malang State Polytech 2 Industrial Internship G 3 Industrial Internship G 4 Subject Course Code Credits / Hour Semester Graduate Learning Outcomes Industrial Internship G		s, IT p strial in c Indus de D4 de D	Trial Internship Guidelines Informatics Engineering Malang State Polytechnic Informatics Engineering Malang State Polytechnic Informatics Engineering Malang State Polytechnic Internship 2 (4 months) 7002 Edits (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products. Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products Mastering documentation techniques and quality assurance				
	project design presentation project dissemination, inconstruction Reference 1 Malang State Polytech 2 Industrial Internship G 3 Subject Course Code Credits / Hour Semester Graduate Learning Outcomes		s, IT p strial in c Indus de D4 ide D4 ide D4 indust RTI21 12 Cro 7 S6 S8 KK2 KK3 PP3	Trial Internship Guidelines Informatics Engineering Malang State Polytechnic Informatics Engineering Malang State Polytechnic Internship 2 (4 months) 7002 Informatics (24 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Able to identify and analyze needs, design, realize and test ICT / science and technology products. Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products Mastering documentation techniques and quality assurance of ICT products.				





		PP5	Mastering knowledge about quality assurance and
			occupational safety and health (K3) principles in ICT
			product development.
		PP6	Mastering knowledge of oral and written communication
			techniques using national and international languages.
		KU2	Able to demonstrate independent, quality and measurable
			performance.
		KU5	Able to make appropriate decisions based on standard
			procedures, design specifications, occupational safety and
			security requirements in supervising and evaluating work.
		KU6	Able to maintain and develop a network of cooperation and
	-		the results of cooperation within and outside the institution.
		KU7	Able to be responsible for the achievement of group work
			results and supervise and evaluate the completion of work
	-	K110	Able to compute out the process of colf evolution of evolution
		KUO	groups under their responsibility and able to manage
			learning independently
	+	KU1	Able to recognize needs adapt and demonstrate ability to
		0	continue self-development (lifelong learning).
Course Learning	:	Able t	o recognize, adapt and work together with individuals and
Outcomes		work	groups in the corporate environment; able to identify the
		compa	ny's business functions;
		be res	ponsible in the process of developing high quality ICT
		produc	ts according to the stages of ICT product development based
		on the	specifications of the company's needs; Documenting the
		proces	ses and results of ICT product development verbally and in
		writing	g independently by internalizing academic values, norms and
S-rhioot		ethics	
Subject :		anion o	f IT project description IT project design IT project design
problem exploration/sub	m1	ssion o	nment project description, 11 project design, 11 project design
dissemination industrial	in	ternshi	prinent process, 11 project documentation, 11 project
Reference	•		
1 Malang State Polytech	_• nni	ic Indus	trial Internship Guidelines
		i inau	
2 Industrial Internship C	Ju	ide D4	Informatics Engineering Malang State Polytechnic
Subject	:	Them	atic KKN
Course Code		RTI21	7003
Credits / Hour :		12 Cr	edits (24 Hours per Week)
Semester	:	7	
Graduate Learning	:	S6	Working together and having social sensitivity and concern
Outcomes			for society and the environment.
		<u>88</u>	Internalize academic values, norms, and ethics.
		DP6	Mastering knowledge of oral and written communication
		110	Mastering knowledge of oral and written communication





		KU2	Able to demonstrate independent, quality and measurable performance.
		KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.
		KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.
		KU7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.
		KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.
		KU1 0	Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).
Course Learning Outcomes	:	Able t and fin village Develo Plans (to appl Govern to utili field th indepe good c norms	b see village potential, recognize needs, identify problems d solutions to increase potential and become an independent ; able to work together to develop and make Long Term opment Plans (RPJMDes), Village Development Activity RKPDes), and other strategic programs in the village; able y the knowledge they have collaboratively with the Village ment and community elements to develop the village; able ze the knowledge, technology, and skills they have in the tey like; able to communicate, make decisions, behave, show ndent performance, self-evaluate and groups, and develop ooperation networks by taking into account the values and in society
Subject	:		
Local community wisdon in society	n,	village	development and empowerment, village governance, ethics
Reference	:		
1 Guidelines for Themat	ic	KKN I	Malang State Polytechnic
2 Guidelines for D4 The	m	atic KK	N Informatics Engineering Malang State Polytechnic





	Subject	:	Teach	ing in schools
	Course Code	:	RTI21	7004
	Credits / Hour	:	12 Cre	edits (24 Hours per Week)
	Semester	:	7	
	Graduate Learning Outcomes	:	S6	Working together and having social sensitivity and concern for society and the environment.
			S8	Internalize academic values, norms, and ethics.
			PP6	Mastering knowledge of oral and written communication techniques using national and international languages.
			KU2	Able to demonstrate independent, quality and measurable performance.
			KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.
			KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.
			KU7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.
			KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.
			KU1 0	Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).
Course Learning Outcomes		•	Able t possess implem make respon cooper in soci	to deepen, demonstrate and teach skills and knowledge sed; able to work with educational units to design, ment and evaluate learning programs; able to communicate, decisions, behave, show independent performance, be sible, evaluate themselves and groups, and develop good ation networks by taking into account the values and norms ety
	Subject	:		
]	National Education Stand	laı	ds, gov	ernance of education units, learning strategies
]	Reference	:		
	1 Teaching Guidelines a	t I	Malang	State Polytechnic Schools
•	2 Teaching Guidelines a	t I	D4 Info	rmatics Engineering Schools, State Polytechnic of Malang
+		-		
+				
	Subject	:	Study	
	Course Code	:	RTI21	7005
	Credits / Hour	:	12 Cre	edits (24 Hours per Week)
	Semester	•	7	· • • /
	Graduate Learning Outcomes	:	S6	Working together and having social sensitivity and concern for society and the environment.





	S8	Internalize academic values, norms, and ethics.
	S9	Demonstrate a responsible attitude towards work in the
		field of expertise independently.
	PP3	Mastering documentation techniques and quality assurance
	DD5	of ICT products.
	PP5	Mastering knowledge about quality assurance and
		product development
	PP6	Mastering knowledge of oral and written communication
		techniques using national and international languages.
	KK2	Able to identify and analyze needs, design, realize and test
		ICT / science and technology products.
	KK3	Able to document and carry out quality assurance in every
		process of development, use, modification, maintenance
	KII)	Able to demonstrate independent, quality and measurable
	KU2	performance
	KU3	Able to study cases of the application of science and
		technology that pay attention to and apply humanities
		values according to their field of expertise in order to
		produce prototypes, standard procedures, designs or works
		of art, compile the results of their studies in the form of
		upload them on the website College
	KU4	Able to compile the results of application case studies in the
		area of expertise possessed in the form of working papers,
		design specifications, or art essays, and upload them on the
		college website.
	KU5	Able to make appropriate decisions based on standard
		procedures, design specifications, occupational safety and
	KII6	Able to maintain and develop a network of cooperation and
	Kee	the results of cooperation within and outside the institution.
	KU7	Able to be responsible for the achievement of group work
		results and supervise and evaluate the completion of work
		assigned to workers who are under their responsibility.
	KU8	Able to carry out the process of self-evaluation of work
		groups under their responsibility, and able to manage
	KI19	Able to document store secure and retrieve data to ensure
	inc)	validity and prevent plagiarism.
	KU1	Able to recognize needs, adapt and demonstrate ability to
	0	continue self-development (lifelong learning).
Course Learning	: Master	ing research methodology and writing scientific papers;
Outcomes	master	ing research ethics; explore problems, needs, think critically
		roduct designs by considering validity values norms and
	ethics:	able to write down ideas in research proposals: deliver and
	verbal	y present research proposals; cooperate and be responsible
	for dev	veloping research according to the stages of research; making
	docum	entation, reports in the form of working papers,





			demonstrating and presenting the process and results of work independently and in working groups; able to communicate, make decisions, show independent performance, be responsible, evaluate themselves and groups, and develop good cooperation networks by taking into account the values and norms in society		
5	Subject	:			
I r	Research methodology, vights, product innovation	wr n,	iting of ethics i	f scientific papers, research outcomes, intellectual property n research, plagiarism	
]	Reference	:			
	1 MBKM Guidelines fo	r l	Malang	State Polytechnic Research Activities 2021	
	2 Guidelines for MBKM. Polytechnic 2021	11	Researc	h Activities D4 Informatics Engineering Malang State	
Ę	Subject	:	Entre	preneurial Activities 1	
(Course Code	:	RTI21	7006	
(Credits / Hour	:	12 Cre	edits (24 Hours per Week)	
5	Semester	:	7		
()	Graduate Learning Dutcomes	:	S 6	Working together and having social sensitivity and concern for society and the environment.	
			S8	Internalize academic values, norms, and ethics.	
			S9	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			S10	Internalize the spirit of independence, struggle and entrepreneurship.	
			PP3	Mastering documentation techniques and quality assurance of ICT products.	
			PP5	Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT product development.	
			KK3	Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products	
			KU2	Able to demonstrate independent, quality and measurable performance.	
			KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.	
			KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.	
			KU7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.	
			KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.	





			KU1	Able to recognize needs, adapt and demonstrate ability to	
C	T			continue self-development (lifelong learning).	
	Course Learning		Able to	s types of organizations: mastering business athics and value	
	utcomes		creatio	s types of organizations, mastering business ethics and value	
			researc	ch inside and outside the institution: write down ideas in ICT	
			produc	et development proposals: deliver and verbally present ICT	
			produc	et development proposals; develop ICT products according	
			to the	stages of ICT product development based on pre-made	
			specifi	cations; create documentation, reports and present work	
			proces	ses and results independently and in work groups by taking	
			into ac	count academic values, norms and ethics.	
Su	ıbject	:			
Bu	isiness value creation, i	de	ea valid	ation, consumer validation, financing sources and strategies,	
111	tellectual property, com	ıp	any ma	nagement, ICT product development	
Re	eference	:			
1	Malang State Polytech	n	ic Entre	preneurial Activity Guidelines 2021	
ว	Guidelines for D4 Ent	ro	propolly	ial Activities in Informatics Engineering Malang State	
2	Polytechnic 2021		preneui	Tal Activities in informatics Engineering Malang State	
3	Barringer BR & Irel	an	d RD	(2016) Entrepreneurshin Successfully Launching New	
	Ventures, Fifth Globa	ul]	Edition		
4	Osterwalder, A., & Pig	gn	eur, Y.	(2010). Business model generation: a handbook for	
	visionaries, game char	ıg	ers, and	challengers. John Wiley & Sons.	
5	Coviello, Nicole E ; an	ıd	Mariar	N V Jones. (2004). Methodological Issues in International	
	Entrepreneurship Rese	ear	rch.		
Su	ıbject	:	Indep	endent Project 1	
C	ourse Code	:	RTI217007		
C	redits / Hour	:	12 Cre	edits (24 Hours per Week)	
Se	emester	:	7		
G	raduate Learning	:	S6	Working together and having social sensitivity and concern	
O	utcomes		60	tor society and the environment.	
_			88	Internalize academic values, norms, and ethics.	
			89	Demonstrate a responsible attitude towards work in the field of expertise independently.	
			PP3	Mastering documentation techniques and quality assurance	
				of ICT products.	
			PP5	Mastering knowledge about quality assurance and	
				occupational safety and health (K3) principles in ICT	
		-	DD/	product development. Mostoring knowledge of and written communication	
			rr0	techniques using national and international languages	
		+	ккэ	Able to identify and analyze needs design realize and test	
			13134	ICT / science and technology products.	
-		1	KK3	Able to document and carry out quality assurance in every	
				process of development, use, modification, maintenance	
				and security of ICT / science and technology products	





C	Course Code	:	RTI21	7008
S	ubject	:	Huma	nity Project
.	State Polytechnic 2021	l		
2	Guidelines for MBKM	II	ndepen	dent Project Activities D4 Informatics Engineering Malang
1	Guide to MBKM Inde	pe	ndent I	Project Activities Malang State Polytechnic
R	eference	:		
1	iojeet management, selt		ine pap	ser writing, innovative ideas, project development
p	roject management scie	ent	ific par	per writing, innovative ideas, project development
S	ubject	:		
~	.		themse	elves and groups, and develop good working networks.
			decisio	ons, show independent performance, be responsible, evaluate
			indepe	ndently and in working groups; able to communicate, make
			demon	strating and presenting the process and results of work
			making	g documentation, reports in the form of working papers.
			cooper	ate and be responsible for realizing the idea as planned.
			and et	als: deliver and verbally present project proposals:
			interna	itional competitions by considering validity, values, norms
0	lutcomes		innova	tive solutions and ideas that can be submitted in national and
	ourse Learning	:	Able	to explore problems, needs, think critically in finding
			0	continue self-development (lifelong learning).
			KU1	Able to recognize needs, adapt and demonstrate ability to
				learning independently.
				groups under their responsibility, and able to manage
			KU8	Able to carry out the process of self-evaluation of work
				assigned to workers who are under their responsibility.
			KU/	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work
-		-	KU7	Able to be responsible for the achievement of group work
			KUO	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution
		-	KIIG	Able to maintain and develop a network of aconstration and
				procedures, design specifications, occupational safety and
			KU5	Able to make appropriate decisions based on standard
			1/11=	college website.
				design specifications, or art essays, and upload them on the
				area of expertise possessed in the form of working papers,
			KU4	Able to compile the results of application case studies in the
				upload them on the website College.
				working papers, design specifications, or art essays, and
				of art, compile the results of their studies in the form of
				produce prototypes, standard procedures, designs or works
				values according to their field of expertise in order to
				technology that pay attention to and apply humanities
+		-	KU3	Able to study cases of the application of science and
			1104	performance.
			KU2	Able to demonstrate independent, quality and measurable





Credits / Hour	:	12 Cre	edits (24 Hours per Week)			
Semester	:	7				
Graduate Learning Outcomes	:	S2	Upholding human values in carrying out duties based on religion, morals and ethics.			
		S6	Working together and having social sensitivity and concern for society and the environment.			
		S8	Internalize academic values, norms, and ethics.			
		KU2	Able to demonstrate independent, quality and measurable performance.			
		KU5	Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.			
		KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.			
		KU7	Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.			
		KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.			
		KU1 0	Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).			
Course Learning Outcomes	:	Able to apply the knowledge possessed collaboratively in collaboration with official organizations to determine humanitarian project programs; able to explore and explore problems, provide solutions, plan and implement humanitarian project programs according to their interests and expertise based on religion, morals, and ethics; able to communicate, make decisions, behave, show independent performance, self-evaluate and in groups, and develop good cooperation networks by taking into account the values, norms and ethics in society				
Subject	:		·			
Humanitarian principles, humanitarian organizations, ethics in society						
Reference	:					
1 Guidelines for MBKM Malang State Polytechnic Humanity Project 2021						
 2 Guidelines for MBKM Humanitarian Project D4 Informatics Engineering Malang State . Polytechnic 2021 						
	-					
	-					
Subject	:	Thesis				
Course Code	:	RTI21	8001			
Credits / Hour	:	8 Crea	lits (16 Hours per Week)			
Semester	:	8				
Graduate Learning Outcomes	:	S 5	Respect the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.			





S6	Working together and having social sensitivity and concern
	for society and the environment.
S8	Internalize academic values, norms, and ethics.
S9	Demonstrate a responsible attitude towards work in the
	field of expertise independently.
PP2	Mastering ICT product development methods to provide the
	right solutions through one or more application domains.
PP3	Mastering documentation techniques and quality assurance of ICT products.
PP5	Mastering knowledge about quality assurance and
	occupational safety and health (K3) principles in ICT
	product development.
PP6	Mastering Knowledge of oral and written communication
KK)	Able to identify and analyze needs design realize and test
	ICT / science and technology products.
ККЗ	Able to document and carry out quality assurance in every
	process of development, use, modification, maintenance
	and security of ICT / science and technology products
KU1	Able to apply logical, critical, innovative, quality, and
	measurable thinking in carrying out specific work in their
	field of expertise and in accordance with work competency
	standards in the field concerned.
KU2	performance
KU3	Able to study cases of the application of science and
	technology that pay attention to and apply humanities
	values according to their field of expertise in order to
	produce prototypes, standard procedures, designs or works
	of art, compile the results of their studies in the form of
	working papers, design specifications, or art essays, and
	Able to compile the results of application case studies in the
	area of expertise possessed in the form of working papers
	design specifications, or art essays, and upload them on the
	college website.
KU5	Able to make appropriate decisions based on standard
	procedures, design specifications, occupational safety and
	security requirements in supervising and evaluating work.
KU6	Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution
KII0	Able to document store secure and retrieve data to ensure
K09	validity and prevent plagiarism
KU1	Able to recognize needs, adapt and demonstrate ability to
0	continue self-development (lifelong learning).





Course Learning	:	Able to	o explore problems in society and the environment, explore					
Outcomes		needs,	needs, think critically and innovatively in finding solutions and					
		thesis	thesis ideas by paying attention to validity and originality; able to					
		write c	write down ideas in a thesis proposal; deliver and verbally present					
		the thesis proposal; cooperate and be responsible for realizing						
		thesis	ideas and producing prototypes, standard procedures,					
		design	s, or other ICT products; making documentation, reports in					
		the for	rm of working papers, demonstrating and presenting the					
		proces	s and results of work independently; able to communicate,					
		make	decisions, show independent performance, be responsible,					
		self-ev	aluate, and develop good cooperation networks by taking					
	-	into ac	count academic values, norms and ethics					
Subject	:							
Thesis proposal, thesis proposal, thesis rules	Thesis proposal, thesis proposal selection, thesis report, thesis seminar results, thesis output, thesis rules							
Reference	:							
1 Malang State Polytech	n	ic Acad	emic Guidelines					
2 Guidelines for Thesis D4 Informatics Engineering State Polytechnic of Malang								
Subject	:	Caree	r development					
Course Code	:	RTI21	8002					
Credits / Hour	:	2 Crea	lits (4 Hours per Week)					
Semester	:	8						
Semester Graduate Learning	:	8 86	Working together and having social sensitivity and concern					
Semester Graduate Learning Outcomes	:	8 S6	Working together and having social sensitivity and concern for society and the environment.					
Semester Graduate Learning Outcomes	:	8 S6 S8	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics.					
Semester Graduate Learning Outcomes	:	8 S6 S8 PP6	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication					
Semester Graduate Learning Outcomes	:	8 S6 S8 PP6	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages.					
Semester Graduate Learning Outcomes	:	8 S6 S8 PP6 KU2	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable					
Semester Graduate Learning Outcomes	:	8 S6 S8 PP6 KU2	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance.					
Semester Graduate Learning Outcomes	:	8 S6 S8 PP6 KU2 KU5	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard					
Semester Graduate Learning Outcomes		8 S6 S8 PP6 KU2 KU5	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and					
Semester Graduate Learning Outcomes		8 S6 S8 PP6 KU2 KU5	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work.					
Semester Graduate Learning Outcomes		8 S6 S8 PP6 KU2 KU5 KU5	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU6</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.</th>		8 S6 S8 PP6 KU2 KU5 KU6	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution.					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU6 KU7</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work</th>		8 S6 S8 PP6 KU2 KU5 KU6 KU7	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU6 KU7</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.</th>		8 S6 S8 PP6 KU2 KU5 KU6 KU7	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility.					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU6 KU7 KU8 KU1</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.</th>		8 S6 S8 PP6 KU2 KU5 KU6 KU7 KU8 KU1	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8 KU1 0</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8 KU1 0	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8 KU1 0 Unders</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).</th>		8 S6 S8 PP6 KU2 KU5 KU5 KU6 KU7 KU8 KU1 0 Unders	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning).					
Semester Graduate Learning Outcomes I <th></th> <th>8 S6 S8 PP6 KU2 KU5 KU6 KU7 KU8 KU1 0 Understa</th> <th>Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning). standing, identifying, and categorizing a career according to ages in Career Development theory; able to apply and</th>		8 S6 S8 PP6 KU2 KU5 KU6 KU7 KU8 KU1 0 Understa	Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Mastering knowledge of oral and written communication techniques using national and international languages. Able to demonstrate independent, quality and measurable performance. Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. Able to maintain and develop a network of cooperation and the results of cooperation within and outside the institution. Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers who are under their responsibility. Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. Able to recognize needs, adapt and demonstrate ability to continue self-development (lifelong learning). standing, identifying, and categorizing a career according to ages in Career Development theory; able to apply and					





and ethics in completing tasks related to career devel Subject : Personal Branding, Informatics Profession, Career in Organization, Career of Career Management, Public Speaking, Career Planning, Career Development, J	lopment; `a Freelancer, John Holland's reer, Career in al Differences							
Subject : Personal Branding, Informatics Profession, Career in Organization, Career of Career Management, Public Speaking, Career Planning, Career Development, J	a Freelancer, John Holland's reer, Career in al Differences							
Personal Branding, Informatics Profession, Career in Organization, Career of Career Management, Public Speaking, Career Planning, Career Development, J	a Freelancer, John Holland's reer, Career in al Differences							
Career Management, Public Speaking, Career Planning, Career Development, J	ohn Holland's eer, Career in al Differences							
Career Management, Public Speaking, Career Planning, Career Development, John Holland's								
Career Orientation Theory, Edgar Schien's Career Anchor Theory, Protean Career, Career in								
the Industrial Age 4.0, Internationalization of Career, Managerial Cultural Differences								
Between Countries								
Reference :								
1 Widyanti, R. (2021). Career Management (Theory, Concept and Practice). Indonesian Science Media								
2 Sinambela, LP (2021). Human Resource Management: Building a solid work	c team to							
. improve performance. Script Earth								
Subject : Industrial Internship 3								
Course Code : RTI218003								
Credits / Hour : 10 Credits (20 Hours per Week)								
Semester : 8								
Graduate Learning : S6 Working together and having social sensitivit	ty and concern							
Outcomes for society and the environment.	-							
S8 Internalize academic values, norms, and ethic	cs.							
S9 Demonstrate a responsible attitude towards field of expertise independently.	s work in the							
PP3 Mastering documentation techniques and qua of ICT products.	ality assurance							
PP5 Mastering knowledge about quality as	ssurance and							
product development.								
PP6 Mastering knowledge of oral and written co	ommunication							
techniques using national and international la	inguages.							
KK2 Able to identify and analyze needs, design, re	ealize and test							
IC1 / science and technology products.	rongo in gran							
NNJ Able to document and carry out quality assur	maintenance							
and security of ICT / science and technology	products							
KU2 Able to demonstrate independent, quality an	nd measurable							
performance.								
KU5 Able to make appropriate decisions based	l on standard							
procedures, design specifications, occupation	nal safety and							
security requirements in supervising and eval	luating work.							
KU6 Able to maintain and develop a network of co	poperation and							
Interesting of cooperation within and outside t KU7 Able to be responsible for the achievement of	of group work							
results and supervise and evaluate the compl assigned to workers who are under their responsible	letion of work							




			KU8	Able to carry out the process of self-evaluation of work				
				learning independently.				
			KU1	Able to recognize needs, adapt and demonstrate ability to				
			0	continue self-development (lifelong learning).				
C O	ourse Learning utcomes	:	Able t work g compa develo ICT p compa produc interna	o recognize, adapt and work together with individuals and groups in the corporate environment; able to identify the ny's business functions; be responsible in the process of ping high quality ICT products according to the stages of roduct development based on the specifications of the ny's needs; Documenting the processes and results of ICT et development verbally and in writing independently by lizing academic values, norms and ethics				
SI	ibject	ŀ	•					
P1	oblem exploration/subi	mı t	ssion o develo	number of the project description, IT project design, IT project design project description and project documentation and project documentation of the project do				
di	ssemination, industrial	in	ternship	o reports				
R	eference	:						
1	1 Malang State Polytechnic Industrial Internship Guidelines 2021							
2	2 Guidelines for D4 Industrial Internship in Informatics Engineering, State Polytechnic of. Malang 2021							
	Subject							
S	ıbject	:	Entre	preneurial Activities 2				
Su C	ıbject ourse Code	:	Entrej RTI21	preneurial Activities 2 8004				
Su C C	ıbject ourse Code redits / Hour	::	Entrej RTI21 10 Cro	preneurial Activities 2 8004 edits (20 Hours per Week)				
Si C C So	ıbject ourse Code redits / Hour emester	:	Entrej RTI21 10 Cro 8	preneurial Activities 2 8004 edits (20 Hours per Week)				
Si C C Si G O	ibject ourse Code redits / Hour emester raduate Learning utcomes	: : : :	Entrej RTI21 10 Cro 8 S6	preneurial Activities 2 8004 edits (20 Hours per Week) Working together and having social sensitivity and concern for society and the environment.				
SI C C So G O	ibject ourse Code redits / Hour emester raduate Learning utcomes	::	Entrej RTI21 10 Cro 8 S6 S8	preneurial Activities 2 8004 edits (20 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics.				
SI C C SC G O	ibject ourse Code redits / Hour emester raduate Learning utcomes	::	Entrej RTI21 10 Cro 8 S6 S8 S9	working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the				
SI C SI G O	ibject ourse Code redits / Hour emester raduate Learning utcomes	:	Entrej RTI21 10 Cro 8 S6 S8 S9	working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently.				
SI C C SI G O	ibject ourse Code redits / Hour emester raduate Learning utcomes		Entrej RTI21 10 Cro 8 S6 S8 S9 S10	preneurial Activities 2 8004 edits (20 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Internalize the spirit of independence, struggle and entrepreneurship.				
Si C C Si G O	ibject ourse Code redits / Hour emester raduate Learning utcomes		Entrej RTI21 10 Cro 8 S6 S8 S9 S10 KU2	Book Book Book				
SI C C SI G O O	ibject ourse Code redits / Hour emester raduate Learning utcomes		Entrej RTI21 10 Cro 8 S6 S8 S9 S10 KU2 KU3	Book Book edits (20 Hours per Week) Working together and having social sensitivity and concern for society and the environment. Internalize academic values, norms, and ethics. Demonstrate a responsible attitude towards work in the field of expertise independently. Internalize the spirit of independence, struggle and entrepreneurship. Able to demonstrate independent, quality and measurable performance. Able to study cases of the application of science and technology that pay attention to and apply humanities values according to their field of expertise in order to produce prototypes, standard procedures, designs or works of art, compile the results of their studies in the form of working papers, design specifications, or art essays, and upload them on the website College.				





		KU5	Able to make appropriate decisions based on standard						
			procedures, design specifications, occupational safety and						
			security requirements in supervising and evaluating work.						
		KU6	Able to maintain and develop a network of cooperation and						
			the results of cooperation within and outside the institution.						
		KU7	Able to be responsible for the achievement of group work						
			results and supervise and evaluate the completion of work						
			assigned to workers who are under their responsibility.						
		KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage						
			learning independently.						
		KU1 0	Able to recognize needs, adapt and demonstrate ability continue self-development (lifelong learning).						
Course Learning	:	Able to	o master the principles of leadership and entrepreneurship in						
Outcomes		variou	ous types of organizations; mastering business ethics and value						
		creatio	n; exploring ICT product needs and ideas; conduct market						
		researc	ch inside and outside the institution; write down ideas in ICT						
		produc	t development proposals; deliver and verbally present ICT						
		produc	t development proposals; develop ICT products according						
		to the	stages of ICT product development based on pre-made						
		specifi	cations; create documentation, reports and present work						
		proces	ses and results independently and in work groups by taking						
	_	into ac	count academic values, norms and ethics.						
Subject	:								
Marketing strategy, leade model, business model va	era 11i	ship co dation	ncept and model, IT product, product validation, business						
Reference	:								
1 Malang State Polytech	ni	c Entre	preneurial Activity Guidelines 2021						
2 Guidelines for D4 Entr. Polytechnic 2021	rej	preneur	ial Activities in Informatics Engineering Malang State						
3 Barringer, BR, & Irela . Ventures, Fifth Globa	an 1 1	d, RD (Edition	(2016). Entrepreneurship Successfully Launching New						
4 Osterwalder, A., & Pig	gn	eur, Y.	(2010). Business model generation: a handbook for						
. visionaries, game char	ıg	ers, and	challengers. John Wiley & Sons.						
5 Coviello, Nicole E; ar	nd	Mariar	N V Jones. (2004). Methodological Issues in International						
. Entrepreneurship Rese	aı	ch.							
		.							
Subject	:	Indep	endent Project 2						
Course Code	:	RTI21	8005						
Credits / Hour	:	10 Cre	edits (20 Hours per Week)						
Semester	:	8							
Graduate Learning	:	S6	Working together and having social sensitivity and concern						
Outcomes			for society and the environment.						
		S8	Internalize academic values, norms, and ethics.						
		S9	Demonstrate a responsible attitude towards work in the						
			field of expertise independently.						





	PP3	Mastering documentation techniques and quality assurance						
	DD5	Mastering knowledge about quality assurance and						
	113	occupational safety and health (K3) principles in ICT						
		product development						
	DD6	Mastering knowledge of oral and written communication						
	rr0	techniques using national and international languages						
	UV)	A has to identify and analyze needs, design realize and test						
	NN2	ICT / science and technology products.						
	KK3	Able to document and carry out quality assurance in every						
		process of development, use, modification, maintenance						
		and security of ICT / science and technology products						
	KU2	Able to demonstrate independent, quality and measurable						
		performance.						
	KU3	Able to study cases of the application of science and						
		technology that pay attention to and apply humanities						
		values according to their field of expertise in order to						
		produce prototypes, standard procedures, designs or works						
		of art, compile the results of their studies in the form of						
		working papers, design specifications, or art essays, and						
		upload them on the website College.						
	KU4	Able to compile the results of application case studies in the						
		area of expertise possessed in the form of working papers,						
		design specifications, or art essays, and upload them on the						
		college website.						
	KU5	Able to make appropriate decisions based on standard						
		procedures, design specifications, occupational safety and						
		security requirements in supervising and evaluating work.						
	KU6	Able to maintain and develop a network of cooperation and						
		the results of cooperation within and outside the institution.						
	KU7	Able to be responsible for the achievement of group work						
		results and supervise and evaluate the completion of work						
		assigned to workers who are under their responsibility.						
	KU8	Able to carry out the process of self-evaluation of work						
		groups under their responsibility, and able to manage						
	17714	learning independently.						
		Able to recognize needs, adapt and demonstrate ability to						
Course Locaria	U • • • • • • •	to explore problems, noode third, entirely in finding.						
Course Learning	ADIE	to explore problems, needs, think critically in finding						
Outcomes	intorra	arive solutions and ideas that can be sublittled in hational and						
	and a	thics: able to write down ideas in the form of project						
	nronos	sals deliver and verbally present project proposals						
	cooper	rate and be responsible for realizing the idea as planned.						
	makin	aking documentation, reports in the form of working papers						
	demor	emonstrating and presenting the process and results of work						
	indene	endently and in working groups: able to communicate make						
	decisi	ons, show independent performance, be responsible, evaluate						
	thems	elves and groups, and develop good working networks.						
Subject	:							
Project management scie	entific na	per writing innovative ideas project development						
1 roject management, sele	mine pa	per writing, infovative ideas, project development						





I	Reference :								
	Guide to MBKM Independent Project Activities Malang State Polytechnic								
	Guidelines for MBKM Independent Project Activities D4 Informatics Engineering Malang								
	State Polytechnic 2021								





Appendix 2 of the 2021 Curriculum RPS

Semester 1

Pancasila



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION	
			(credits)/hour			
Pancasila	RTI221001	I MKU, Compulsory, and	2 SKS/2 HOURS	1	July 2, 2021	
		Supporting				
AUTHORIZATION	RPS Developer Le	ecturer	ММК	Ka PRODI		
			Coordinator			
	Widaningsih, S.P.	si, SH, MH	Atiqah Nurul Asri,	Imam Fahrur	Rozi, ST., MT.	
	Dr. Shohib Muslir	n, SH, MH	S.Pd., M.Pd.			
Learning Achievement (CP)	Learning Outcom	es of Study Program Gradu	ates (CPL-Prodi)			





	S2 Uphold human values in carrying out duties based on religion, morals, and ethics.
	S3 Contribute to improving the quality of life in society, nation, state, and the advancement of civilization based on
	pancasila.
	S4 Plays a role as a citizen who is proud and loves the country, has nationalism and a sense of responsibility to the country
	and
	nation.
	S5 Appreciate the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others.
	S6 Working together and having social sensitivity and concern for society and the environment.
	S7 Obey the law and discipline in the life of society and the state.
	S8 Internalize academic values, norms, and ethics.
	KU2 Able to demonstrate independent, quality and measurable performance.
	Learning Outcomes Graduates charged to courses (CPL-MK)
	Mastering the concepts of ideology, institutions and rules in the state; demonstrate an attitude of nationalism, concern for
	society and the environment, respect for diversity of cultures, views, religions and beliefs, uphold human values, and obey the
	law; able to demonstrate independent performance in completing assignments by taking into account academic values, norms
	and ethics
Short Course Descriptions	Able to understand the history, foundation, and philosophy & position of Pancasila so that it becomes the basis of the Republic
	of Indonesia
Learning Materials/subject	1. Pancasila education in historical & cultural review
matter	2. Pancasila education in juridical & philosophical view
	3. Pancasila in the context of the history of the struggle of the Indonesian nation
	4. Pancasila as a system of philosophy
	5. RI 1945 Constitution
	6. Amendments to the 1945 Republic of Indonesia Constitution
	7. Trias Politica in the Republic of Indonesia
	8. State institutions according to the 1945 Constitution of the Republic of Indonesia
	9. Pancasila as the national ideology
	10. Another ideology that is developing in the world
	11. Pancasila and Human Rights
	12. Implementation of human rights in the 1945 Constitution of the Republic of Indonesia
	13. Corruption Crime





				14. Pancasila as the	4. Pancasila as the Development Paradigm							
Referer	nce	S		Main :								
				Pancasila Teaching Mo	dule							
				Supporters:								
1) Sri Huc				1) Sri Hudiarini, et	al, Panca	sila Educatio	n in the His	torical and St	tate Adr	ninistration Perspe	ctive of the Republic of	Indonesia
				Revised Edition, Aditya	Media Pu	ublishing, 20	16, Yogyaka	irta				
				2) Muhammad No	oor Syam,	Translation (of Pancasila	Philosophy	in Legal	Philosophy (As th	e Foundation for Develo	pment of
				the National Legal Syst	em), Panc	asila Labora [.]	tory, State	Jniversity of	Malang	, 2000, Malang		
Instruct	tio	nal Media		Software :		Hardware :						
				Microsoft Word,		Computers/	Laptops					
				MicrosoftExcel,								
				Microsoft Power Point								
				(Online)								
Name o	of L	ecturer		Widaningsih, S.Psi, SH, MH								
				Dr. Shohib Muslim, SH, MH								
Require	em	ents Course										
Week		Planned Fina	I	Study material	Learnir	ng Forms and	Estimat	Student Lea	arning	Assessment Criteria	& Assessment Indicator	Rating
		Capabilities (Sub-CP-MK)		(Learning materials)	N	lethods	ed time	Experier	nce	Forms		Weight (%)
(1)		(2)		(3)		(4)	(5)	(6)		(7)	(8)	(9)
1	•	Recognize	the	1) The ultimate	Format:	Lecture	1x3x	- Know	the	Criteria:	Form : Oral Test	
		final objecti	ve of	goal of lectures	• C	Online (<i>Onlin</i>	e 50"	ultimate g	goal of	Precision ar	d Criteria:	
		the course		2) Historical and)	(1x50	')	lectures		mastery	 Students' 	
	•	Be able	to	cultural definition of	Asynchro	onous -	\rightarrow	- Kno	wing	Form	f ability to explain	
		explain	the	Pancasila	learning	video		the historio	cal and	assessment:	and answer	
		definition	of		• C	Online (<i>online</i>	e)	cultural de	finition	 Presenta 	i questions about	3%
		Pancasila			(1x50') S	ync → Vcon	,	of Pancasila	а	on	the historical and	
		historically	and		discussio	on		Understand	ding	Active	cultural definition	
		culturally.			Learning	; methods:		the concep	t of the	group discussion	n of Pancasila	
	•	Able	to		Contextu	ial Teachin	g	definition	of	includes askir	g	
		understand	the		and Lear	ning (CTL)		Pancasila				





	concept of Pancasila historically and culturally		Assignment: Task 1 : Find examples of case studies in everyday life that are in accordance with the implementation of Pancasila (1x50') Offline		historically and culturally	and answering (affective) • question about the definition of Pancasila		
2	Able to explain the definition of Pancasila juridically and philosophically	Juridical and philosophical definition of Pancasila	Format: Lecture ● Online (Online) (1x50') Asynchronous → learning video ● Online (online) (1x50') Sync → Vcon, discussion Learning methods: ● Contextual Teaching and Learning (CTL) Assignment: Task 2 : Look for examples of the juridical and philosophical definition of Pancasila (1x50') Offline	1x3x 50"	 Understan d and explain the definition of Pancasila juridically and philosophically 	Criteria: Accuracy and mastery of the material Form of assessment: • Presentati on • Active group discussion includes asking and answering (affective) • The attractiveness of the explanation of the material	- Appropriate ness and clarity in answering and explaining regarding the juridical and philosophical definition of Pancasila	3%
3	Able to explain Pancasila in the context of the history of the	Able to explain Pancasila in the context of the history of the	Format: Lecture ● Online (Online) (1x50') Asynchronous → learning video	1x3x 50	• Understan ding Pancasila in the context of the history of the	Criteria: Accuracy and mastery of the material	• The accuracy of students explaining the definition of Pancasila in the	3%





	struggle of the Indonesian nation	struggle of the Indonesian nation	 Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignment 3 : individual 		struggle of the Indonesian nation • Explaining Pancasila in the context of the history of the struggle of the Indonesian nation	Formofassessment:•Presentation•Activegroupdiscussionincludesaskingandanswering(affective)	context of the history of the Indonesian nation's struggle	
			presentation with current topic (1x50') <i>Offline</i>					
4	QUIZ 1	Evaluation	Independent task of compiling an essay	1x3x 50	-	-	-	10%
5	Be able to explain the definition of Pancasila as a philosophical system	- The definition of Pancasila as a system of philosophy	Format: Lecture ● Online (Online) (1x50') Asynchronous → learning video ● Online (online) (1x50') Sync → Vcon, discussion Learning methods: ● Contextual Teaching and Learning (CTL) Assignment: Task 5 group discussion on Pancasila as a system	1x3x5 0	- Understand and explain the definition of Pancasila as a philosophical system	Criteria: Answer accuracy Problem solving creativity Communic ation attraction Form of assessment: group discussion	 Student accuracy in answering questions about the definition of Pancasila as a philosophical system 	3%





			of philosophy (1x50') <i>Offline</i>					
6	Able to explain and decipher the 1945 Constitution of the Republic of Indonesia and the amendments to the 1945 Constitution of the Republic of Indonesia	Able to explain and decipher the 1945 Constitution of the Republic of Indonesia and the amendments to the 1945 Constitution of the Republic of Indonesia	Format: Lecture ● Online (Online) (1x50') Asynchronous → learning video ● Online (online) (1x50') Sync → Vcon, discussion Learning methods: ● Contextual Teaching and Learning (CTL) Assignment: Task 6 group discussion on the concept of the 1945 Constitution and amendments to the 1945 Constitution of the Republic of Indonesia (1x50') Offline	1x3x 50	- Understan d the concept of 1945 Constitution and amendments to the 1945 Constitution of the Republic of Indonesia	Criteria: Clarity answers questions Clarity of content Vriting suitability Easy for readers to understand Form of assessment: group discussion	 Student accuracy in answering questions about the 1945 Constitution and amendments to the 1945 Constitution Clarity of the contents of the material written by students 	3%
7	Able to explain and describe the Trias Politica in the Republic of Indonesia	Definition of Trias Politica in the Republic of Indonesia	Format: Lecture • Online (Online) $(1x50')$ Asynchronous \rightarrow learning video • Online (online) $(1x50')$ Sync \rightarrow Vcon, discussion	1x3x 50	- Answering questions and discussing Trias Politica in the Republic of Indonesia	Criteria:PrecisionandmasteryFormofassessment:•Presentation	 Accuracy of students in answering questions The accuracy of students in presenting Trias 	3%





			Learning methods: • Contextual Teaching and Learning (CTL) Assignment: Task 5 group discussion on Trias Politica in the Republic of Indonesia (1x50') Offline			 Group discussion activity includes asking and answering (affective) questions about Trias Politica in the Republic of Indonesia 	Politics in the State of the Republic of Indonesia and packaging it into a good and interesting presentation	
8	Able to explain and describe State Institutions according to the 1945 Constitution of the Republic of Indonesia	Definition of State Institutions according to the 1945 Constitution of the Republic of Indonesia	Format: Lecture ● Online (Online) (1x50') Asynchronous → learning video ● Online (online) (1x50') Sync → Vcon, discussion Learning methods: ● Contextual Teaching and Learning (CTL) Assignment: Assignment: group discussion on state institutions according to the 1945 Constitution of the Republic of Indonesia (1x50') Offline	1x3x5 0	 Understan ding the definition of State Institutions according to the 1945 Constitution of the Republic of Indonesia 	Criteria: Accuracy and mastery of the material Form of assessment: • Ability to make presentations • Interest in making presentations	 Students' ability to understand State Institutions according to the 1945 Constitution of the Republic of Indonesia 	3%
9	Material test week 1 to 8	UTS	UTS ONLINE	1X4X5 0″	UTS	UTS	UTS	20%





10	Pancasila as	1) The	Format: Lecture	1x3x5	Mastering	Criteria:	 Students' 	
	National Ideology	definition of	• Online (Online	0″	and answering	Precision and	ability to	
		Pancasila as the) (1x50')		questions about	mastery	understand and	
		national ideology	Asynchronous \rightarrow		the definition,	Form of	explain the	
		2) The function	learning video		function and	assessment:	definition, function	
		of Pancasila as a	• Online (<i>online</i>)		process of	 Presentati 	and process of	
		national ideology	(1x50') Sync \rightarrow Vcon,		forming Pancasila	on	forming Pancasila	
		The process of	discussion		as a national	 Active 	as a national	
		forming Pancasila as	Learning methods:		ideology	group discussion	ideology	29/
		a national ideology	 Contextual 			includes asking		3%
			Teaching and Learning			and answering		
			(CTL)			(affective)		
			Assignment:			question about		
			Assignment: group			Pancasila as the		
			discussion about			National ideology		
			Pancasila as a National					
			Ideology (1x50')					
			Offline					
11	Another ideology	Another definition of	Format: Lecture	1x3x5	- Mastering	Criteria:	 The ability 	
	that is developing	ideology that	• Online (<i>Online</i>	0	and answering	Precision	of students to	
	in the world	developed in the) (1x50')		questions about	and mastery	understand and	
		world	Asynchronous \rightarrow		the definition,	Form of	explain about other	
			learning video		function and	assessment:	ideologies that are	
			• Online (<i>online</i>)		process of	 Presentati 	developing in the	
			(1x50') Sync \rightarrow Vcon,		forming Pancasila	on	world	3%
			discussion		as a national	Active		
			Learning methods:		ideology	group discussion		
			 Contextual 		- Mastering	includes asking		
			Teaching and Learning		and answering	and answering		
			(CTL)		questions about	(affective)		
					other ideologies			





			Assignment: group		that are			
			discussion about		developing in the			
			other ideologies that		world			
			are developing in the		-			
			world (1x50') <i>Offline</i>					
12	Pancasila and	Definition of	Format: Lecture	1x3x5	Mastering and	Criteria:	- Students'	
	Human Rights	Pancasila and	• Online (Online	0″	answering	Precision and	ability to	
		Human Rights) (1x50')		questions about	mastery	implement	
			Asynchronous \rightarrow		Pancasila and	Form of	effective	
			learning video		human rights	assessment:	communication	
			• Online (<i>online</i>)			Presentati	methods within an	
			(1x50') Sync \rightarrow Vcon,			on	organizational	
			discussion			 Active 	team	
			Learning methods:			group discussion		3%
			 Contextual 			includes asking		
			Teaching and Learning			and answering		
			(CTL)			(affective)		
			Assignment: group			questions about		
			discussion on the			the definition of		
			definition of Pancasila			Pancasila and		
			and HAM (1x50')			human rights		
			Offline					
13	QUIZ	Evaluation	Online Test	1x3x5	-	-	-	10%
				0				10%
14	Implementation of	1) Definition of	Format: Lecture	1x3x5	- Mastering and	Criteria:	Student's ability to	
	human rights in the	the implementation	• Online (<i>Online</i>	0	answering	Precision and	understand and	
	1945 Constitution	of human rights in) (1x50')		questions about	mastery	explain the	
	of the Republic of	the 1945	Asynchronous \rightarrow		the Definition and	Form of	definition of	3%
	Indonesia	Constitution of the	learning video		Characteristics of	assessment:	negotiation,	
		Republic of			the	 Presentati 	negotiation	
		Indonesia			Implementation	on	approach,	





		2) Characteristi	• Online (<i>online</i>)		of Human Rights	Active	characteristics of	
		cs of the	(1x50') Sync \rightarrow Vcon,		in the 1945	group discussion	negotiation and	
		Implementation of	discussion		Constitution of	includes asking	negotiation steps	
		Human Rights in the	Learning methods:		the Republic of	and answering		
		1945 Constitution of	Contextual		Indonesia	(affective)		
		the Republic of	Teaching and Learning			questions		
		Indonesia	(CTL)			regarding the		
			Assignment: group			implementation		
			discussion on the			of human rights in		
			implementation of			the 1945		
			human rights in the			Constitution of		
			1945 Indonesian			the Republic of		
			Constitution (1x50')			Indonesia		
			Offline					
15	Corruption Crime	Definition of	Format: Lecture	1x3x5	- Conduct a	Criteria:	• Accuracy of	
		Corruption Crime	• Online (<i>Online</i>	0	presentation on	Precision and	students in	
		-Characteristics of) (1x50')		the Definition and	mastery	answering	
		Corruption	Asynchronous \rightarrow		Characteristics of	Form of	questions	
			learning video		Corruption	assessment:	• The	
			• Online (<i>online</i>)		Crimes	 Presentati 	accuracy of	
			(1x50') Sync \rightarrow Vcon,			on	students in	
			discussion			Active	presenting	
			Learning methods:			group discussion	information system	3%
			 Contextual 			includes asking	projects in front of	
			Teaching and Learning			and answering	forums, and	
			(CTL)			(affective)	packaging them	
			Assignment: group			questions about	into a good and	
			discussion on			corruption	interesting	
			corruption (1x50')			• Interest in	presentation	
			Offline			making		
						presentations		





16	Pancasila as the	Definition of	Format: Lecture	1x3x5	- Mastering	Criteria:	 Students' 	
	Development	Pancasila as a	• Online (Online	0	and answering	Precision and	ability to	
	Paradigm	Development) (1x50')		Pancasila	mastery	understand and	
		Paradigm	Asynchronous \rightarrow		questions as a	Form of	explain about	
			learning video		Development	assessment:	moderation and	
			• Online (<i>online</i>)		Paradigm	 Presentati 	minutes	
			(1x50') Sync \rightarrow Vcon,		-	on		
			discussion			 Active 		
			Learning methods:			group discussion		29/
			 Contextual 			includes asking		370
			Teaching and Learning			and answering		
			(CTL)			(affective)		
			Assignment: Task 5			questions about		
			group discussion on			Pancasila as a		
			Pancasila as a			Development		
			Development			Paradigm		
			Paradigm (1x50')					
			Offline					
17	UAS	Evaluation	Online Exam	1x3x5	-	-	-	200/
				0				2070





Information Technology Concept



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/ hour	SEMESTER	DATE. PREPARATION
Information Technology	RTI221002	Basic Informatics	2 credits/4 hours	1	July 2, 2021
Concept					
AUTHORIZATION	RPS Developer Lec	urer	MMK Coordinator	Ka PRODI	
	Bagas Satya Dian N	ugraha, ST., MT.	Maybe Astiningrum, ST., M.Kom.	Imam Fahrur	[·] Rozi, ST., MT.
	Faisal Rahutomo, S	Г., М.Kom., Dr. Eng.			
	Moch Zawaruddin	Abdullah, S.ST., M.Kom.			
Learning Achievement (CP)	Learning Outcomes	of Study Program Graduat	tes (CPL-Prodi)		
				ļ	
	S8 Internalize	academic values, norms, an	id ethics.		
	PP1 Mastering	he concepts of applied mat	hematics, basic knowledge of ICT (Al	gorithms, Prog	gramming, Databases, Computer
	Networks,	etc.), engineering science, a	nd engineering principles in the field	of ICT in dept	h.
	PP7 Mastering	knowledge about technolog	ical developments and the latest issu	ues (ethical, so	cial, legal and economic) related to
	the ICT field	d.	·		
	KU2 Able to der	nonstrate independent, qua	ality and measurable performance.		
	Learning Outcomes	Graduates charged to cou	rses (CPL-MK)		
	Mastering ICT Conc	epts, Technology Innovatio	n, Scientific and ICT developments ar	nd the latest is	sues, Engineering Ethics, Computer
	Systems, Computer	Systems Concepts, Data Re	epresentation, Boolean Algebra, Flow	charts, Compι	iter Networks and the Internet, IT
	Applications in Vari	ous Fields, IT Field Certifica	tion; able to demonstrate independe	nt performand	e in completing tasks related to the
	concept of informa	tion technology.			
Short Course Descriptions	In this course, tech	nology concepts, technolog	ical innovation, science and technolo	gy developme	nt, engineering ethics, ICT
	development, com	outer systems, computer sy	stem concepts, data representation,	Boolean algeb	ra, flowcharts, computer networks
	and the Internet, IT	applications in various field	ds, certification will be discussed. IT f	ield.	





Learning Materials / Subjects	Technology concept
	Technology Innovation
	Science and Technology Development
	• Engineering Ethics
	ICT development
	Computer system
	Computer System Concept
	Data Representation
	• Boolean Algebra
	• Flow chart
	Computer Networks and the Internet
	• IT Applications in Various Fields
	• IT Field Certification.
References	Main :
	1. Glen J. Coulthard, 2012, Computing Now, McGraw-Hill Book.
	2. Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition, McGraw-Hill.
	Supporters:
	1. Munir, Curriculum based on Information and Communication technology, Cet.II. Bandung. 2008, p.9
	2. Davis, WS Computers and Information Systems: An Introduction. West Publishing Company.
	3. Khalili, TM Management of Technology: The Key to Competitiveness and Wealth Creation. McGraw-Hill. 2000.





		4. Samuel, A. Weir, J.	Introduction to Engin	eering Des	ign. Elsevier Science & To	echnology Books.	1999.	
Instruct	ional Media	Software :	Hardware :					
		LMS	LCDs and Pro	jectors				
Name o	f Lecturer	Bagas Satya Dian Nugraha,	ST., MT.					
		Faisal Rahutomo, ST., M.Ko	m., Dr. Eng.					
Poquiro	monte Courco	Moch. Zawaruddin Abdullai	n, S.ST., IVI.KOM					
Week	Planned Final Capab (Sub-CP-MK)	oility Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students understar concept of Informa Technology Students can know function and utiliza information technol Students can know grouping of informa technology Students can find o building componen Students can know basic role of IT 	hd the Informati on Technology Concept the Function s and utilization of Information Technology the ation Informati on technology grouping the IT the IT building components • The basic role of IT	Forms of Learning: (Online) Learning methods: Contextual Teaching and Learning (CTL), Self Directed Learning (SDL) Assignment: Individual Assignment Summarize Information Technology	1x3x50'	By studying Information Technology Concepts material students can: 1. Understand the current concept of information technology 2. Understand the role and function of IT in today's world	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions • Appro priateness, clarity, straightforwar dness in	• Students can explain the concept of information technology, the function and utilization of IT, the grouping of IT, the building components of IT, the basic role of IT	2%





		 Informati on Technology Trends 	review			answering the tasks given		
2	 Students understand about Technological Innovation Students know the difference between information system innovation and Modern Information Technology Students can understand examples of information system innovation and Modern Information Technology 	 Technolo gy Innovation Differenc es between information system innovation and modern information technology Examples of information system innovation and modern information technology 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative Learning (CoL) Assignment: Group assignment summarizes 2020 modern era IT innovation	1x3x50'	By studying Information Technology Innovation materials students can: 1. Understand current information technology innovations 2. Find examples of current innovations	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering • Appro priateness, clarity, straightforwar dness in answering the tasks given	 Students have the ability to understand and explain the differences between information system innovation and modern information technology 	2%
3	 Students can know the meaning of science and technology Students can find out the development of science and technology Students can find out the 	 Definitio n of science and technology Develop ment of science and technology 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL),	1x3x50'	By studying science and technology development material students can: 1. Understand current developments in	Criteria: Precision and mastery Form of assessment:	• Students have the ability to understand science and technology and have the ability to understand the impact of science	2%





	 development of science and technology in the field of education Students can find out the impact caused by the influence of science and technology and find solutions 	 The development of science and technology in the field of education The influence of science and technology and its solutions 	Cooperative Learning (CoL) Assignment: Group assignments review the topic of the world of IT in science and technology		science and technology 2. Knowing examples of the development of science and technology in the world of education	 Active group discussion includes asking and answering Appro priateness, clarity, straightforwar dness in answering the tasks given 	and technology and their solutions		
4	 Students can know the meaning of Ethics in the use of IT Technology Students can understand and explain the types of IT ethical issues Students can know the role of ethics in the IT field 	 Definitio Definitio n of Ethics Use of Ethics in IT technology Types of IT ethical issues The Role of Ethics in IT Professio nal Ethics and responsibilities of the IT profession 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative Learning (CoL) Assignment: Group assignments review the topic of international standards of ethics for the IT	1x3x50'	By studying Ethics in Information Technology students can: 1. Know the examples of professional ethics that exist in the world of IT 2. Understand the unwritten ethics in the world of IT	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering • Appro priateness, clarity, straightforwar dness in	• Students have the ability to understand and explain the meaning of ethics in the use of IT Technology	2%	





			profession			answering the tasks given			
5	Quiz 1	 Technolo gy concept Technolo gy Innovation Develop ment of science and technology Engineeri ng Ethics 	• Online exams	1x60'	Quiz	Quiz	• Students are able to know and understand the concepts of Technology, Technology Innovation, Science and Technology and IT Ethics	12%	
6	 Students know the development of ICT Students know about the benefits of ICT and its application in various sectors Students can know the difference between ICT and ICT 	 Definitio n of ICT ICT development The benefits of ICT and its application The difference 	Forms of Learning: (<i>Online</i>) Learning methods: <i>Contextual</i> <i>Teaching and</i> <i>Learning (CTL),</i> <i>Self Directed</i>	1x3x50'	By studying ICT development materials, students can: 1. Know the benefits of ICT in various sectors	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and	• Students can understand the development of ICT, its application and the differences between ICT and ICT	2%	





	 Students can find out the influence of ICT in organizations 	between ICT and ICT	Learning (SDL) Assignment: Individual Tasks Summarize the review of ICT Development		2. Know the difference between ICT and ICT	answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given			
7	 Students understand the concept of computer systems and their components 	 Compute r System Concept Compute r Structure I/O devices Intercon nection between components Register Memory Processo r (CPU) CU/ Control Unit PESTLE BUS 	Forms of Learning: (Online) Learning methods: Contextual Teaching and Learning (CTL), Self Directed Learning (SDL) Assignment: Individual Tasks Summarize the concept of a computer system, as well as reviewing computer components on	1x3x50'	By studying the concept of computer system concepts students can: 1. Knowledge of computer concepts 2. Know the components in a computer	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	• Ability to understand and explain the structure of computers and their components	2%	





			each PC/laptop					
8	 Students understand the concept of computer systems Students can find out about computer system architecture 	 Compute r system elements Compute r system architecture Compute r system components 	owned. Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative Learning (CoL) Assignment: Group assignments review the topic of computer architecture on a computer that is	1x3x50'	By studying Computer Systems material students can: 1. Know the architecture of a computer 2. Know the functions of computer components	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	• Ability to understand and explain basic computer systems and computer system components	2%
9	UTS	 Technolo gy concept Technolo gy Innovation Develop ment of science and technology 	Online exams	1x60'	UTS	UTS	• Ability to understand how to apply IT concepts, science and technology, computer systems	20%





		 Engineeri ng Ethics Compute r system Compute r System Concept ICT development 						
10	 Students understand the concept of Data Representation 	 Definitio n of Data representation Number System Arithmeti Type data type Number Theory Number Conversion Data Presentation 	Forms of Learning: (Online) Learning methods: Contextual Teaching and Learning (CTL), Self Directed Learning (SDL) Assignment: Individual assignments work on sample questions of data representation.	1x3x50'	By studying the concept of Data Representation Concepts students can: 1. Understand the Concept of Data Representation 2. Understand the conversion of a computer number	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	• Ability to understand how to apply data representation concepts including number systems, data types and number theory	2%





11	• Students understand the	Basic	Forms of	1x3x50'	By studying Algebraic	Criteria:	Ability to	2%
11	 Students understand the concept of Boolean Algebra 	 Basic Logic Operations Logic Operations and Logic Gates Boolean expression Laws of Boolean Algebra Boolean Functions Boolean Algebra Application 	Forms of Learning: (Online) Method : Contextual Teaching and Learning (CTL), Self Directed Learning (SDL) Assignment: Individual assignments work on boolean algebra	1x3x50'	By studying Algebraic Concepts material students can: 1. Understand algebraic concepts 2. Know the logic operations that exist on the computer	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in	 Ability to understand how to apply Boolean algebra concepts, laws and their applications 	2%
			examples.			answering the tasks given		
12	 Students understand the concept of Flowchart 	 Flowchar t concept Types of Flowcharts Flowchar t Symbols Case studies in the application of flowcharts 	Forms of Learning: (<i>Online</i>) Learning methods: <i>Contextual</i> <i>Teaching and</i> <i>Learning (CTL),</i> <i>Self Directed</i> <i>Learning (SDL)</i>	1x3x50'	By studying Flowchart material students can: 1. Know the concept of flowchart 2. Implementin g a flowchart in a case	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and	• Ability to understand how to apply flowchart concepts and case studies	2%





			Assignment: Individual assignments work on flowchart sample questions.			answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given			
13	• Quiz 2	 IT Application Concept Compute r Networks and the Internet Flow chart Data Representation Flow chart 	Online exams	1x60'	Quiz	• Quiz	• Ability to understand IT application concepts, computer and internet networks, flowcharts, data representation	12%	
14	 Students understand the concept of Computer Networks and the Internet 	 Compute r Network Concept Internet concept and understanding 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative	1x3x50'	By studying the concept of computer networks, students can: 1. Know the basic concepts of computer networks 2. Know the types and functions	Criteria: Precision and mastery Form of assessment: • Active group discussion	• Ability to understand how to apply the concept of computer and internet networks along with topologies, types of networks and network devices	2%	





15	• Students understand the	 Types of computer networks Internet and Intranets Network topology Network device 	Learning (CoL) Assignment: Group assignments review the topic of computer network devices Ecorms of	1v2vE0'	of computer networks	includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	Ability to	2%	
15	 Students understand the concept of IT applications 	 IT Application Concept Types of IT applications The function and role of IT in everyday life and the company 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative Learning (CoL) Assignment: Group assignments review IT application topics	1x3x50'	By studying IT Application Concepts material students can: 1. Understand the concept of the application 2. Know the types and functions of IT applications in everyday life	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	 Ability to understand how to apply IT application concepts in everyday life 	2%	





16	Students get to know Certification in the IT Field	 Definitio n of certification Types of IT field certification 	Forms of Learning: (Online) Learning methods: Self Directed Learning (SDL), Cooperative Learning (CoL) Assignment: Group assignments review the topic of certifications in the IT field	1x3x50'	By studying Certification material in the IT Field students can: 1. Understand the meaning and benefits of certification in the IT field 2. Know the types of certification in the world of IT	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering questions Appropriatene ss, clarity, straightforwar dness in answering the tasks given	• Ability to understand the types and types of IT certification	2%
17	UAS	Online exams	UAS	1x60'	UAS	UAS	UAS	30%





Critical thinking and problem solving



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/ hour	SEMESTER	DATE. PREPARATION
Critical Thinking & Problem Solving	RTI221003	Study Program Competency Support Courses	2 credits/3 hours	1	December 24, 2021
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI	
	1. Yoppy Yunhash	awa, S.ST., M.Sc.	Atiqah Nurul Asri, S.Pd., M.Pd.	Imam Fahrui	r Rozi, ST., MT.
	2. Dwi Puspitasar	i, S.Kom., M.Kom.			
	3. Maybe Astining	grum, ST., M.Kom.			
	4. Agung Nugroho	o Pramudhita, ST., MT.			
Learning Achievement (CP)	Learning Outcome	s of Study Program Gradua	tes (CPL-Prodi)		
	S8 Internalize acad	emic values, norms, and eth	nics	-	
	S9 Demonstrate a r	esponsible attitude toward	s work in the field of expertise indepe	ndently.	
	KU1 Able to apply I in accordance	ogical, critical, innovative, c e with work competency sta	juality, and measurable thinking in car andards in the field concerned.	rying out speci	fic work in the field of expertise and
	KU2 Able to demor	nstrate independent, quality	and measurable performance.		
	KU10 Able to recog	nize needs, make adaptatio	ons and demonstrate ability to continu	e self-develop	ment (lifelong learning).
	Learning Outcome	s Graduates charged to cou	rses (CPL-MK)		
	Mastering the conc	ept of thinking and problen	n solving; independently able to identi	fy problems ar	nd needs, perform analysis, gather
	information, think	ogically, critically, and inno	vatively in solving simple problems by	considering va	lues, norms, and ethics





	SUB-CPMK 1	Students are a	ble to explain the concept of thinking and reasoning as skills. [C2]
	SUB-CPMK 2	Students are a	ble to explain the basic concepts of critical thinking [C1, C2, C4, C5]
	SUB-CPMK 3	Students are a	ble to explain basic problem-solving skills. [C1, C2, C3, C5]
	SUB-CPMK 4	Students are a	ble to explain and use basic problem solving skills [C2, C3, C6]
	SUB-CPMK 5	Students are a	ble to explain and develop the concept of Applied Critical Thinking [C2, C4, C5, C6]
	SUB-CPMK 6	Students are a	ble to explain and use advanced problem solving skills [C2, C3]
	SUB-CPMK 7	Students are a	ble to explain and apply critical reasoning. [C2, C6]
Short Course Descriptions	In this course stud	dents will learn a	bout the concept of critical thinking and how to apply it in responding to information in everyday life.
	In addition, this c	ourse will teach a	bout concepts and techniques in solving cases/problems both within the scope of exams/tests, as
	well as on problem	ns encountered	n everyday life.
Learning Materials / Subjects	1. Thinking and	Reasoning	
	2. Critical Think	ing Foundation	
	3 Basic Probler	n Solving Skills	
	5. Busierrobier		
	4. Applied Critic	al Thinking	
	5. Advanced Tro	oubleshooting Ca	pabilities
	6. Advanced Te	chniques for Prot	blem Solving
	7. Critical Reaso	oning	
References	Main :		
	1. Thinking Skill	s Critical Thinking	g and Problem Solving Second edition
	Supporters:		
	1. Critical Thinki	ng Skills For Dum	imies
Instructional Media	Software :		Hardware :
	1. Microsoft Pov	werPoint	1. Laptops/PCs
	2. Google Forms	5	2. Projector LCDs





	3. (Google Classroom	3. Projecto	or Screen				
Name o	f Lecturer 1. 1 2. [3. r 4. A ments Course -	Yoppy Yunhasnawa, S.ST., I Dwi Puspitasari, S.Kom., M Maybe Astiningrum, ST., M Agung Nugroho Pramudhit	M.Sc. .Kom. .Kom. a, ST., MT.					
Week:	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(%)
1	Students are able to explain the concept of thinking and reasoning as skills. [C2]	 Thinking as an ability Critical thinking Solution, not a problem 	Lectures, discussions.	3 x 50"	 Be able to explain [C2] the concept of thinking as an ability Be able to explain [C2] the concept of critical thinking Be able to explain [C2] the importance of focusing on solutions instead of the causes of problems 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion The number of correct answers to the practice questions 	3%
2-4	Students are able to explain the basic concepts of critical thinking [C1, C2, C4, C5]	- Claims, assertions, and assertions	Lectures, discussions.	3 x 50″	 Be able to explain [C2] the differences between claims, 	 Liveliness in discussion Collection of answers to 	 Students take part in 	9%





- Assess a claim	assertions, and statements	practice questions.	the discussion	
	 Able to assess [C5] a claim Be able to explain [C2] the concept of an argument Be able to identify [C1] an argument Able to analyze [C4] an argument Be able to explain [C2] the concept of complex arguments 		- The number of correct answers to the practice questions	
	 Be able to explain [C2] the concept of conclusion Be able to explain 			1
	[C2] the concept of reason			I
	 Be able to explain [C2] the concept of assumptions 			l
	 Be able to explain [C2] the concept of flaws and fallacies 			1





5	- Quiz-1	- Materials for meeting-1 to meeting-4	Theory exam	3 x 50"	 Working on theory test questions in the form of essays and/or multiple choice. 	- Completion of exam questions.	 Number of correct answers. 	12%	
6-8	Students are able to explain basic problem- solving skills. [C1, C2, C3, C5]	 What is meant by problem? How do we solve a problem? Select and use information Process data Methods rather than solutions Problem solving with search Pattern recognition hypotheses, reasons, explanations, and inferences Spatial reasoning Need and Sufficiency 	Lectures, discussions.	3 x 50"	 Be able to explain [C2] what is meant by a problem Be able to identify [C1] ways to solve a problem Able to select [C5] and use [C3] information appropriately Able to perform processing of data Be able to identify [C1] methods of solutions. Able to solve problems by doing searches Be able to identify [C1] patterns Be able to explain [C2] the concept 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion The number of correct answers to the practice questions 	9%	





		 Choose and use models Make choices and decisions 			 of hypotheses, reasons, explanations, and inferences Be able to explain [C2] the concept of spatial reasoning Be able to explain [C2] the concept of need (necessity) and adequacy (sufficiency) Able to select [C1] and use [C3] model Able to explain [C2] how to make choices and make decisions 				
9	- UTS	- Materials for meeting-6 to meeting-8	Theory Exam	3 x 50"	 Working on theory test questions in the form of essays and/or multiple choice. 	- Completion of exam questions.	 Number of correct answers. 	12%	
10-11	Students are able to explain and use basic	InferenceExplanation	Lectures, discussions.	3 x 50″	- Be able to explain [C2] the concept of inference	 Liveliness in discussion Collection of 	 Students take part in 	6%	





problem solving skills [C2,	- Proof	- Be able to explain	answers to	the	
L3, Lb]	- Credibility	[C2] the concept of explanation	practice questions.	discussion	
C3, C6]	 Credibility Critical thinking and science Present long arguments Apply analytical skills Critical evaluation Respond with a more in-depth argument 	 [C2] the concept of explanation Be able to explain [C2] proof concept Be able to explain [C2] the concept of credibility Be able to explain [C2] the relationship between critical thinking and science Be able to build [C6] long arguments Able to apply [C3] analytical skills Be able to explain 	practice questions.	 The number of correct answers to the practice questions 	
		[C2] the concept of critical evaluation			
		- Be able to compose [C6] follow-up responses with deeper arguments			





12	Students are able to explain and develop the concept of Applied Critical Thinking [C2, C4, C5, C6]	 Unite abilities - use imagination Develop models Carry out investigations Data analysis and inference 	Lectures, discussions.	3 x 50"	 Be able to explain [C2] the concept of pooling abilities using imagination Be able to develop [C6] models Able to conduct investigations [C5] Able to do data analysis and inference [C4] 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion The number of correct answers to the practice questions 	3%
13	Students are able to explain and use advanced problem solving skills [C2, C3]	 Using a mathematical method Graphical method Probability, tree diagrams, and decision trees 	Lectures, discussions.	3 x 50"	 Able to use [C3] mathematical methods Able to use [C3] graphical method Be able to explain [C2] the concept of probability, tree diagrams, and decision trees 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion The number of correct answers to the practice questions 	3%
14	- Quiz-2	- Materials for meeting-10 to meeting-13	Theory Exam	3 x 50"	 Working on theory test questions in the form of essays and/or multiple choice. 	 Completion of exam questions. 	 Number of correct answers. 	12%




15-16	Students are able to explain and apply critical reasoning. [C2, C6]	 Terms and Conditions Common sense and validity Non-deductive reasoning Reasoning with statistics Decision-making Principle critical writing 	Lectures, discussions.	3 x 50″	 Be able to explain [2] the concept of terms and conditions Be able to explain [2] the concept of common sense and validity Be able to explain [2] the concept of Non-deductive Reasoning Be able to explain [2] the concept of reasoning with statistics Be able to explain [2] the concept of reasoning with statistics Be able to explain [2] how to make the right decision Be able to explain [2] the principle concept Able to make [C6] critical writing 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion The number of correct answers to the practice questions 	6%	
17	- UAS	- All material from start to finish	Theory Exam	3 x 50"	- working on theory test questions in the form of essays	 Completion of exam questions. 	 Number of correct answers. 	25%	





		and/or multiple		
		choice.		





Mathematics 1



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

		SEMESTER LEA	RNING PLAN	N (RPS)	
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION
MATHEMATICS 1	RTI221004	Core	2 credits/ 6 hours	1	September 3, 2021
AUTHORIZATION	RPS Developer Le	ecturer	MMK Coordinator	Ka PRODI	
	 Rudy Ariya Dr. Eng. Ca Rosa And Eng. Erfan Roha Drs. Rawa Deasy San Diana May Grezio Aria 	anto, ST., M.Cs. ahya Rahmad, ST, M. Kom rie Asmara, ST., MT., Dr. adi, ST., M.Eng., Ph.D. nsyah, M.Pd. dhya Elya, S.Si., M.Si. yangsari Ramadhani, SST fiyah PSKom M Kom	Deasy Sandhya Elya, S.Si., M.Si.	Priest Fahru	ır Rozi, ST., MT.
Learning Achievement (CP)	Learning Outcom	es of Study Program Gradu	ates (CPL-Prodi)		
	S8 Intern	alize academic values, norms,	and ethics.		
	S9 Demo	nstrate a responsible attitude	towards work in the fi	eld of expertis	e independently.
	PP1 Maste	ring the concepts of applied m	nathematics, basic ICT	knowledge (Al	Igorithms, Programming, Databases, computer
	KU2 Able t	o demonstrate independent of	, and engineering print wality and measurable	opies in the IC	
	Learning Outcom	es Graduates charged to co	ourses (CPL-MK)		









(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Students are able to	Number Type	Form :	6 x 50"	By studying	Criteria:	Able to work on	2%
	understand the		Studying		and	Scoring criteria	exercises	
	concept of types of		- Online (understandin	rubric	systematically	
	numbers		Online)		g the existing		related to the	
			(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
			\rightarrow learning		expected to	 Presentatio 		
			video		be able to	n		
			- Online (understand	 Written 		
			online) (2x50')		and work on	test, about		
			$\operatorname{Sync} o \operatorname{Vcon}$,		questions	solving case		
			discussion		related to the	studies		
					material.			
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			Logic					
			(3x50') Offline					
2	Students are able to	Factors and Prime	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%
1	understand Factors	Numbers	Studying		and	Scoring criteria	exercises	
	and Prime Numbers				understandin	rubric	systematically	





			- Online (g the existing		related to the	
			Online)		material,	Form of	material presented.	
			(1x50')		students are	assessment:		
			Asynchronous		expected to	 Presentatio 		
			\rightarrow learning		be able to	n		
			video		understand	 Written 		
			- Online (and work on	test, about		
			online) (2x50')		questions	solving case		
			Sync \rightarrow Vcon ,		related to the	studies		
			discussion		material.			
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			Logic					
			(3x50') Offline					
3	Students are able to	Fractions, Ratios	Form :	6 x 50″	By studying	Criteria:	Able to work on	1.5%
	understand the	and Percentages	Studying		and	Scoring criteria	exercises	
	concept of Fractions,		- Online (understandin	rubric	systematically	
	Ratios, and		Online)		g the existing		related to the	
	Percentages		(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
					expected to			





			1						/
			\rightarrow learning		be able to	 Presentatio 			
			video		understand	n			
			- Online (and work on	 Written 			
			online) (2x50')		questions	test, about			
			Sync \rightarrow Vcon ,		related to the	solving case			
			discussion		material.	studies			
			Learning						
			methods:						
			Contextual						
			Teachina and						
			Learning (CTL)						
			(c · _)						
			Assignment:						
			Assignments :						
			Do practice						
			questions						
			related to						
			Logic						
			(3x50') Offline						
4	Students are able to	Decimal Numbers	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%	
	understand the	(division, fraction,	Studving		and	Scoring criteria	exercises		
	concept of Decimal	comma2)	- Online (understandin	rubric	systematically		
	Numbers (division,	,	Online)		g the existing		related to the		
	fractions , comma2		(1x50')		material,	Form of	material presented.		
	numbers)		Asvnchronous		students are	assessment:	•		
	/		\rightarrow learning		expected to	Presentatio			
			video		be able to	n			
			- Online (understand	Written			
			online) (2x50')		and work on	test. about			
			, , , , , , , , , , , , , , , , , , , ,		questions	,			





			Sync \rightarrow Vcon , discussion		related to the material.	solving case studies		
			Learning methods: Contextual Teaching and Learning (CTL)					
			Assignment: Assignments : Do practice questions related to Logic (3x50') Offline					
5	Quiz 1	- Material 1 to 4	Online written exam	6 x 50"	Answer questions correctly	- Answer accuracy	Quiz 1	7.5%
6	Students are able to understand the concept of rank	Rank	Form : Studying - Online (Online) (1x50') Asynchronous \rightarrow learning video - Online (online) (2x50') Sync \rightarrow Vcon , discussion	6 x 50″	By studying and understandin g the existing material, students are expected to be able to understand and work on questions	Criteria: Scoring criteria rubric Form of assessment: • Presentatio n • Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%





					related to the			
			Learning		material			
			methods:		macentan			
			Contextual					
			Contextuur Toaching and					
			reaching and					
			Learning (CTL)					
			Assignment:					
			Assignments					
			Do practice					
			questions					
			rolated to					
			LUGIC					
	Curda da sua subla da	N		с г о″	D at dias			4 50/
/	Students are able to	Number System 1	Form :	6 X 50	By studying	Criteria:	Able to work on	1.5%
	understand the		Studying		and	Scoring criteria	exercises	
	concept of Number		- Online (understandin	rubric	systematically	
	System 1		Online)		g the existing		related to the	
			(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
			\rightarrow learning		expected to	 Presentatio 		
			video		be able to	n		
			- Online (understand	 Written 		
			online) (2x50')		and work on	test, about		
			$\operatorname{Sync} o \operatorname{Vcon}$,		questions	solving case		
			discussion		related to the	studies		
					material.			
			Learning					
			methods:					





			Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to					
			Logic (3x50') <i>Offline</i>					
8	Students are able to understand the concept of Number System 2	Number System 2	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL)	6 x 50"	By studying and understandin g the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: • Presentatio n • Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%
			Assignment:					





9	UTS	- Material from meeting 1 to 8	Assignments : Do practice questions related to Logic (3x50') <i>Offline</i> Online written exam	6 x 50"	Answer Questions Correctly	- Answer accuracy	UTS	30%
10	Students are able to understand the concept of Introduction to Algebra (linear equations, coefficients, constants etc.), Algebraic Ranks, Algebraic Factoring	Introduction to Algebra (linear equations, coefficients, constants etc.), Algebraic Powers, Algebraic Factoring	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignments : Do practice	6 x 50"	By studying and understandin g the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: • Presentatio n • Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%





			questions					
			related to					
			Logic					
			(3x50') Offline					
11	Students are able to	Solving linear	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%
	understand and solve	and polynomial	Studying		and	Scoring criteria	exercises	
	the concept of solving	equations	- Online (understandin	rubric	systematically	
	linear equations and		Online)		g the existing		related to the	
	polynomials		(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
			\rightarrow learning		expected to	Presentatio		
			video		be able to	n		
			- Online (understand	Written		
			online) (2x50')		and work on	test, about		
			Sync \rightarrow Vcon ,		questions	solving case		
			discussion		related to the	studies		
					material.			
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			Logic					
			(3x50') Offline					





12	Students are able to	Chart	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%
	understand concepts		Studying		and	Scoring criteria	exercises	
	and draw graphs		- Online (understandin	rubric	systematically	
			Online)		g the existing		related to the	
			(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
			\rightarrow learning		expected to	 Presentatio 		
			video		be able to	n		
			- Online (understand	Written		
			online) (2x50')		and work on	test, about		
			Sync $ ightarrow$ Vcon ,		questions	solving case		
			discussion		related to the	studies		
					material.			
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			Logic					
			(3x50') Offline					
13	Students are able to	Combinatorial	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%
	understand the	(factorial,	Studying		and	Scoring criteria	exercises	
	concept of	combination,	- Online (understandin	rubric	systematically	
	combinatorial	permutation,	Online)		g the existing		related to the	
	(factorial, combination,	chance)			material,		material presented.	





	permutation,		(1x50')		students are	Form of		
	opportunity)		Asynchronous		expected to	assessment:		
			\rightarrow learning		be able to	 Presentatio 		
			video		understand	n		
			- Online (and work on	 Written 		
			online) (2x50')		questions	test, about		
			$\operatorname{Sync} o \operatorname{Vcon}$,		related to the	solving case		
			discussion		material.	studies		
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			(3x50 [°]) Offline	с БО //			<u> </u>	7 50/
14	Quiz	- Material from	Online written	6 x 50"	Answer	- Accuracy of	Quiz	7.5%
		meeting 9 to 12	exam		questions	explanation		
					correctly	- Oral questions		
						- Task		
15	Studente are able to	Trigonomotry	Form	6 v 50"		Critoria	Able to work or	1 E9/
12	understand the	(special angles	FURITI :	0 X 3U	by studying	Cineria:	ADIE LO WOLK ON	1.5%
	concont of	(special dilgies,	Studying Onlino (undorstandin	rubric	exercises	
	Trigonometry (special	formula)	- Online (a the existing		systematically	
	ingonometry (special	ioiniulaj	Unine j		B LIE ENSUING			





	angles, Pythagorean		(1x50')		material,	Form of	related to the	
	formula)		Asynchronous		students are	assessment:	material presented.	
			\rightarrow learning		expected to	 Presentatio 		
			video		be able to	n		
			- Online (understand	 Written 		
			online) (2x50')		and work on	test, about		
			$\operatorname{Sync} o \operatorname{Vcon}$,		questions	solving case		
			discussion		related to the	studies		
					material.			
			Learning					
			methods:					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Assignments :					
			Do practice					
			questions					
			related to					
			Logic					
			(3x50') Offline					
16	Students are able to	Number Series	Form :	6 x 50"	By studying	Criteria:	Able to work on	1.5%
	understand the		Studying		and	Scoring criteria	exercises	
	concept of Number		- Online (understandin	rubric	systematically	
	Series		Online)		g the existing		related to the	
			(1x50')		material,	Form of	material presented.	
			Asynchronous		students are	assessment:		
			\rightarrow learning		expected to	 Presentatio 		
			video		be able to	n		
					understand			





			- Online (<i>online)</i> (2x50') Sync → Vcon , discussion		and work on questions related to the material.	 Written test, about solving case studies 			
			Learning methods: Contextual Teaching and Learning (CTL)						
			Assignment: Assignments : Do practice questions related to Logic (3x50') Offline						
17	UAS	- Material from meeting 1 to 16	Online exams	6 x 50"	Able to do the questions well	- Answer accuracy	UAS	35%	





English 1



MALANG STATE POLYTECHNIC IFORMATION TECHNOLOGY DEPARTMENT TUDY PROGRAM: Diploma 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (SKS)/hour	SEMESTER	DATE. PREPARATION						
ENGLISH 1	RTI221005	Characteristics of PT	2 credits/ 4 hours	1	November 2021						
AUTHORIZATION	RPS Developer Lecturer		MMK Coordinator	Ka PRODI							
	Atiqah Nurul Asri, S.Pd, M.Pd		Atiqah Nurul Asri,	Imam Fahrur Rozi, ST, MT							
			S.Pd. , M.Pd								
Learning	Learning Outcomes of Study Pro	ogram Graduates (CPL-Prodi)									
Achievement				ļ							
(CP)	1. S8 Internalize acad										
	2. PP6 Mastering know										
	and international.										
	3. KU2 Able to demons	trate independent, quality and m	easurable performance.								
	4 KU11 Able to commu	aicate using international languag	tes orally and in writing								
	4. KOTT Able to commu		ses orany and in writing.								
	Learning Outcomes Graduates	charged to courses (CPL-MK)									
	Mastaring knowledge of a	ral and written communication to	obniques using English ir	the contout of Information F] naineering, Able to						
	Mastering knowledge of o	rai and written communication te	configues using English in	i the context of informatics E	ngineering; Able to						
	communicate independen	communicate independently using English orally and in writing in the context of informatics Engineering by taking into account values,									
	norms and etnics;										
	The SLIP CPL MK are as follows:										
	1 Mastering and applyi	nows.	on techniques using Engli	sh in the context of Informat	ics Engineering with						
	the tonic Computer I		in teeningues using Liigh		ies Engliteering with						





	2. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>Computer Architecture</i> .
	3. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with <i>Multimedia topics.</i>
	4. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>Networking</i> .
	5. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>the Website.</i>
	6. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic <i>Careers in IT.</i>
	7. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic <i>IT Support Staff.</i>
	8. Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of Workstation Health and Safety.
Short Course Descriptions	The name of this course is <i>English Informatics</i> 1 taught to students of the Informatics Engineering Study Program which is focused on training their abilities and skills in <i>Listening, Speaking, Reading</i> and <i>Writing</i> in an integrated manner in the context of Informatics Engineering . So that the topics in this material are adapted to the context of the field of Informatics which can be applied in everyday life and in the world of work in the future. Methods used during the teaching-learning process include lectures, discussions, <i>role plays</i> , presentations, debates, individual and group projects, <i>Problem -Based Learning, Project-Based Learning, Cooperative and Collaborative Learning, Know-What-Learn, SQ3R</i> , and done online/online .
Learning	Topic 1: Computer Applications
Materials /	1.1. Kinds of computer applications and their potential users in everyday life.
Subjects	1.2. Grammar Study: Simple Present Tense
	1.3. Grammar Study: Imperatives and Sequencers
	Topic 2: Computer Architecture
	2.1. Types of computers
	2.2. A computer advertisement
	2.3 . The functions of computer hardware
	2.4. Grammar Study: Comparative and Superlatives
	2.5. Grammar Study: Useful Phrases for Presentation





	Topic 3: Multimedia
	3.1. Toolbox from a graphics package and multimedia equipment
	3.2. Grammar Study: Time clauses
	3.3. Grammar Study: Passive Sentences
	Topic 4: Networking
	4.1. Network and network hardware
	4.2. Network topologies
	4.3. Grammar Study: If-Clauses
	Topic 5: Websites
	5.1. Types of websites and their purposes
	5.2. The most visited websites based on their purposes and their reasons
	5.3. Types of Charts
	5.4. Grammar Study: Expressions for Explaining Charts
	5.5. Criteria of a good website
	5.6. A website reviews
	Topic 6: Careers in IT
	6.1. Kinds of careers in IT, their job descriptions, and requirements
	6.2. Grammar Study: Modals and be + essential/critical
	6.3. A dream job
	Topic 7: IT Support Staff
	7.1. Common computer problems and their solutions
	7.2. Grammar Study: Modals
	7.3. Writing a report
	7.4. Grammar Study: Conjunctions
	Topic 8: Workstation Health and Safety
	8.1. Computer-related health and safety problems
	8.2. Grammar Study: Modals
	8.3. Security and rules for using a company computer and laboratory
References	Main:
nerer enees	
	Asri, Atiqah Nurul. 2018. English for Informatics 1: Seventh Edition. The module has not been published yet.





	Supporters:									
	1. Esteras, Sa	antiago Remacha. (20)10). Infotech En	glish for	r Computer Us	ers Workbook . Cam	ıbridge: Cambridge Un	iversity Press.		
	2. Esteras, Sa	antiago Remacha. (20)11). Infotech En	glish for	r Computer Us	ers Student's Book .	Cambridge: Cambridge	e University Press.		
	3. Fabre, Ele	na Marco, and Estera	s, Santiago Rema	acha. (2	007). Professi	onal English in Use:	ICT. Cambridge: Camb	ridge University		
	press. 4. Hills, Davi	d. (2012). English for	Information Tecl	hnology	v Vocational Ei	nglish Course Book 2	. Essex:			
	Pearson E 5. Glendinni	ducation Limited. ng, Eric H and McEwa	ın, John. (2012).	Basic Er	nglish for Com	puting Revised and	Updated. Oxford: Oxfo	rd University Press.		
	6. Olejniczak	6. Olejniczak, Maja. (2011). English for Information Technology 1 Vocational English Course Book . Essex: Pearson Education Limited.								
Instructional	Software:	Software: Hardware:								
Media	Zoom, WhatsApp, Mentimeter, Padl	om, WhatsApp, JTI LMS, Polinema LMS, Camtasia, computers, microphones, headsets, mobile phones , audio files, and speakers entimeter, Padlet , Canva, etc.								
Name of	1. Atiqah Nurul	Asri, S.Pd, M.Pd		•						
Lecturer	2. Faiz Ushbah	Mubarok, S.Pd, M.Pd								
	3. Farida Ulfa, S	S.Pd, M.Pd								
	4. Satrio Binusa	a S., SS, M.Pd								
Requirements course										
Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning material	Learning F s) and Metl	orms hods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)	
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	
1-2	 Mastering and applying oral and written communication 	1. Topic 1: Computer Uses 1.1. Kinds of computer	Forms of Learning: Face to face	e:	8 x 50 minutes consist of	By using English students can: • identify and explain various	Criteria: Precision and mastery	Accuracy and mastery of student	5%	





techniques	applications and	Offline/Online	2 x 50	computer	Form of assessment:	communication using	
using English in	their potential		minutes	applications	Oral test	English in:	
the context of	users in everyday	Task 1:	face to face	found in	• Writton tost based		
Informatics	life.	Write a	online	everyday life	written test based on case studies	Identity and explain	
Engineering	1.2 . Grammar Study:	paragraph about		and their users	and presentations	applications found in	
with the topic	Simple Present	the use of the	3 x 50	by completing	(refer to the	applications found in	
Computer Uses	Tense	computer in both	minute	tables.	rubric	users by completing	
•	1.3. Grammar	your leisure time	structured	 listen to 	rusticy	tables	
	Study:	and study using	assignments	conversations	Rubric: See in SAP	tubics.	
	Imperatives and	Simple Present	2	about 4 people		 listen to 	
	Sequencers	Tense.	3 X 50	with different		conversations about 4	
			independent	jobs and		people with different	
		Task 2:	assignments	identify the use		jobs and identify the	
		In a group of	ussignments	of computers in		use of computers in	
		three, make a		carrying out		carrying out their	
		presentation		their work.		WORK.	
		about installing		• road identify		 read, identify, and re- 	
		software using		and re-explain		explain the contents	
		imperatives and		the contents of		of the reading about	
		sequencers .		the reading		The Digital Age	
				about The		. Is all fam similarities in	
		Learning		Digital Age		 look for similarities in words found in the 	
		methods:				toxt with their	
		• Lecture		 look for 		meanings	
		 Small group 		similarities in		meanings	
		discussions		words found in		 identify the Simple 	
				the text with		Present Tense form in	
		 Problem based 		their meanings		the text above	
		learning		• identify the		• write a paragraph	
		 Presentation 		• Identity the		 write a paragraph about computer use 	
				Tonco form in		in snare time and	
				the text above		study time using the	
				the text above		Simple Present Tense	
				• write a			
				paragraph			





					 about computer use in spare time and study time using the Simple Present Tense. identified imperatives and sequencer forms in the reading about Windows 10 installation instructions. write and present application software installation processes using imperatives and sequencers. 		 identified imperatives and sequencer forms in the reading about Windows 10 installation instructions . write and present application software installation processes using imperatives and sequencers. 	
3 - 4	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of Computer Architecture. 	 2. Topic 2: Computer Architecture 2.1. Types of computer 2.2. A computer advertisement. 2.3. The functions of computer hardware 2.4. Grammar Study: Comparative 	Forms of Learning: Face to face: Offline/Online Task: In a group of three, find two different advertisements of PCs/laptops/any gadgets and write	8 x 50 minutes 2 x 50 minutes face to face online 3 x 50 minute structured assignments	 By using English students can: Identify and explain the various types of computers and their functions listen to the dialogue and identify explicit 	Criteria: Precision and mastery Form of assessment: • Oral test • Written test based on case studies and presentations (refer to the rubric) Rubric: See in SAP	 Accuracy and mastery of student communication using English in: Identify and explain the various types of computers and their functions listen to dialogue and identify explicit and implicit information. 	5%











					gadget specifications, identify, analyze the differences and similarities and make		PCs/laptops/gadgets using comparatives, superlatives, and useful phrases for presentation based on specifications.	
					sentences using comparatives and superlatives .			
					 laptops /gadgets using comparatives, superlatives, and useful phrases for presentation based on their specifications. 			
5 - 6	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with Multimedia topics. 	3. Topic 3: Multimedia 3.1. Toolbox from a graphics package and multimedia equipment 3.2. Grammar Study: Time Clauses 3.3. Grammar Study: Passive Sentences	Forms of Learning: Face to face: Offline/Online Task: In a group, make a presentation about telling a process of making or editing pictures, videos, or music using any software you	8 x 50 minutes 2 x 50 minutes face to face online 3 x 50 minute structured assignments	 By using English students can: mention and explain the functions of <i>the</i> <i>toolbox</i> found in multimedia applications. enumerate and explain the functions of various 	 Criteria: Precision and mastery Form of assessment: Oral test Written test based on case studies and presentations (refer to the rubric) Rubric: see in SAP 	 Accuracy and mastery of student communication using English in: mention and explain the functions of <i>the toolbox</i> found in multimedia applications. enumerate and explain the functions of various multimedia devices. 	10%





	kr wv pc Le m •	now. Use time vords and the bassive voice. earning nethods: • Lecture • Small group discussions • Cooperative learning • Problem based learning • Presentation	3 x 50 minute independent assignments	 multimedia devices. read, understand, and explain the contents of Understanding MP3 reading . read, understand, and complete the reading with the words provided. Identify and use forms of time clauses understand and use passive sentences able to change active sentences 	 read, understand, and be able to retell the contents of Understanding MP3 reading . read, understand, and complete the reading with the words provided. Identify and use forms of time clauses understand and use passive sentences active sentences into passive sentences. present the process of editing images, videos, or audio files using time clauses and passive sentences . 	
				 understand and use passive sentences able to change active sentences into passive sentences. present the process of editing images, videos, or audio files using time clauses and 	• present the process of editing images, videos, or audio files using <i>time clauses</i> and <i>passive sentences</i> .	





					nassiva			1
					pussive			
					sentences .			
7								20%
/				UTS				20%
7 8-9	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic Networking.	 4. Topic 4: Networking 4.1. Network and network hardware 4.2. Network topologies 4.3. Grammar Study: If-Clause 	Forms of Learning: Face to face: Offline/Online Task: Multiple Choice Questions at LMS. Learning methods: • Lecture • Group discussions • Case study • Contextual learning	UTS 8 x 50 minutes 2 x 50 minutes face to face online 3 x 50 minute structured assignments 3 x 50 minute independent assignments	 By using English students can: identify and redefine network hardware and its functions. understand and explain Network Health Center LAN drawings and answer questions describe and explain the meaning of network and hardware components based on the 	Criteria: Precision and mastery Form of assessment: • Oral test • The written test is in the form of multiple choice questions.	 Accuracy and mastery of student communication using English in: understand the diagram about the components in the LAN and explain their functions. understand and explain <i>Network Health Center</i> LAN drawings and answer questions describe and explain the meaning of <i>network</i> and <i>hardware components</i> based on the picture given. 	20%
					 read and understand the text entitled <i>Networks</i> and identify whether the given sentences are <i>true</i> or <i>false</i>. 		 read and understand the text entitled <i>Networks</i> and identify whether the given sentences are <i>true</i> or <i>false</i>. read, understand and complete the text in the form of an email 	





								1
					 read, 		with the words	
					understand and		provided.	
					complete the		Pood and understand	
					text in the form		• Read and understand	
					of an email with		tenclogics	
					the words		topologies.	
					provided.		 identify the network 	
					a identificand		<i>topology</i> in the	
					• identity and		sentence according to	
							the reading above.	
					TIELWOIK		C	
					copology based		 read, understand, and 	
					on the drawings		apply the use of <i>lf</i> -	
					provided		Clause Type 1 in	
					 Read and 		sentences and	
					understand texts		dialogues.	
					on <i>network</i>			
					topologies.			
					identify the			
					• Identity the			
					topology based			
					on the			
					doscription given			
					in the contence			
					according to the			
					reauling above.			
					• read,			
					understand, and			
					apply the use of			
					If-Clause Type 1			
					in sentences and			
					dialogues.			
10-11	 Mastering and 	5 Tonic 5: Websites	Forms of	8 x 50	By using English	Criteria:	Accuracy and mastery of	10%
1V 11	annlying oral	St Topic St Websites	Learning	minutes	students can.	Precision and	student communication	10/0
	and written		Face to face	minutes		mastery	using English in	
						mastery	using Linghon III.	





	communication	5.1. Types of	Offline/Online	2 x 50	• read,		 read, understand and 	
1	techniques	websites and	,	minutes	understand and	Form of assessment:	be able to retell short	
	using English in	their purposes.	Task:	face to face	be able to retell	 Oral test 	readings about The	
1	the context of	5.2. The most visited	In a group of		short readings		World Wide Web	
	Informatics	websites are	three, find the	3 x 50	about The World	 Written test based 		
	Engineering	based on their	criteria for a aood	minute	Wide Web	on case studies	 find explicit and 	
,	with the topic	purposes	website choose	structured		and presentations	implied information	
	Websites .	5.3. Types of Charts	one available	assignments	 find explicit and 	(refer to the	related to the above	
		5.4. Grammar Study:	website and		implied	rubric)	reading	
		Expressions for	make an analysis	3 x 50	information	Rubric: see in SAP	 read, understand and 	
		Explaining	hasad on the	minute	related to the		be able to retell short	
		Charts	critoria you have	independent	above reading		passages on Types of	
		5.5. Criteria of a	found You are	assignments	• read,		Websites - A Guide for	
		good website	Jouria. You are		understand and		Website Designers	
		5.6. Website reviews	NOT allowed to		be able to retell		-	
			take references		short passages		Find explicit and	
			from Wikipedia or		on Types of		implied information	
			blogs.		Websites - A		related to the text	
					Guide for		above.	
			Learning		Website		 mention and explain 	
			methods:		Designers		the types of websites	
			Lecture		 Find explicit and 		and the purpose of	
					implied		the images provided.	
			• group		information			
			discussion		related to the		 do a simple research 	
			Problem based		text above.		about the most	
			learning				mequently visited	
					 mention and 		interviewing	
			 Discovery 		explain the types		classmates	
			learning		of websites and			
			Contoxtual		their purpose		 read, understand and 	
					based on the		be able to retell short	
					pictures		readings about Charts	
					provided.		• Montion the venices	
					• do a simple		 Iviention the various types of charts along 	
					research about		types of charts along	





		the most	with their forms and	
		frequently	functions.	
		visited websites		
		hy interviewing	 make a chart based 	
		classmates	on the results of the	
		classifiates.	interview and present	
		• read,	it.	
		understand and		
		be able to retell	 mention and explain 	
		short readings	the criteria of a good	
		about Charts	website.	
		 Mention the 	 find a website and 	
		various types of	write a review based	
		charts along	on the criteria	
		with their forms	mentioned above and	
		and functions.	present it in class.	
		• make <i>a chart</i>		
		based on the		
		results of the		
		interview and		
		present it.		
		P		
		 mention and 		
		explain the		
		criteria of a good		
		website.		
		 find a website 		
		and write a		
		review based on		
		the criteria		
		mentioned		
		above and		
		present it in		
		class.		





applying oral and written communication techniques using English in face tof 6.1. Kinds of careers in IT, their job descriptions, and offline/OnlineLearning: Face to Face Offline/Onlineminutesstudents can: omnutesPrecision and masterystudent communication using English in: omnutesstudent communication masterystudent communication using English in: omnutesstudent communication masterystudent communication using English in: omnutesstudent communication types of jobs in the IT field, job descriptions and qualifications required.Precision and masterystudent communication using English in: omnutesstudent communication types of jobs in the IT field, jobPrecision and masterystudent communication using English in: omnutesstudent communication types of jobs in the IT field, jobInformatics6.2. Grammar and be	12-13	 Mastering and 	6. Topic 6: Careers in IT	Forms of	8 x 50	By using English	Criteria:	Accuracy and mastery of	10%
and written communication techniquesin IT, their job descriptions, and descriptions, and requirements.Face to Face Offline/Online• Mention the types of jobs in the IT field, jobmasteryusing English in: • Mention the types of jobs in the IT field, jobusing English in the context of Informatics6.2. Grammar and be +Task:minutes face to face online• Mention the types of jobs in the IT field, job• Oral test qualifications required.• Oral test qualifications required.• Written test based required.		applying oral	6.1. Kinds of careers	Learning:	minutes	students can:	Precision and	student communication	
communication techniques using English in the context of Informatics descriptions, and requirements.Offline/Online Consist of 2 x 50types of jobs in the IT field, job• Mention the types of jobs in the IT field, job 6.2. Grammar the context of Informatics Task:minutesdescriptions and face to face online• Oral test• Mention the types of jobs in the IT field, job 6.2. Grammar the context of Informatics5tudy: modals and be + <i>Create a 2–5-</i> minute videoface to face onlinequalifications required.• Written test based required.• Written test based required.		and written	in IT, their job	Face to Face		 Mention the 	mastery	using English in:	
techniques using English in the context of Informaticsrequirements.2 x 50the IT field, jobForm of assessment:jobs in the IT field, jobdescriptions and face to face online6.2. GrammarTask:minutesdescriptions and qualifications required.• Oral testdescriptions and qualifications required.		communication	descriptions, and	Offline/Online	consist of	types of jobs in		 Mention the types of 	
using English in the context of Informatics6.2. GrammarTask:minutesdescriptions and qualifications online• Oral testdescriptions and qualifications required.		techniques	requirements.		2 x 50	the IT field, job	Form of assessment:	jobs in the IT field, job	
the context of InformaticsStudy: modals and be +Create a 2–5- minute videoface to face onlinequalifications required.qualifications required.		using English in	6.2. Grammar	Task:	minutes	descriptions and	Oral test	descriptions and	
Informatics and be + minute video online required. • Written test based required.		the context of	Study: modals	Create a 2–5-	face to face	qualifications		qualifications	
		Informatics	and be +	minute video	online	required.	Written test based	required.	
Engineering essential/critical talking about on case studies		Engineering	essential/critical	talking about			on case studies		
with the topic6.3. A dream jobyour dream job by3 x 50• Completeand role• Complete training on		with the topic	6.3. A dream job	your dream job by	3 x 50	• Complete	and role	Complete training on	
Careers in IT. answering these minute training on 11 play/simulation 11 jobs.		Careers in IT .		answering these	minute	training on H	play/simulation	TI JODS.	
following structured Jobs. (referring to the				following	structured	JODS.	(referring to the	 read, understand and 	
<i>questions:</i> assignments • read, complete exercises				questions:	assignments	• read,	rubric)	complete exercises	
1. What is your understand and Rubric: See in SAP regarding short job				1. What is your		understand and	Rubric: See in SAP	regarding short job	
dream job? Why 3 x 50 complete description texts in				dream job? Why	3 x 50	complete		description texts in	
do you want it? minute exercises the IT field.				do you want it?	minute	exercises		the IT field.	
2. What are the independent regarding short				2. What are the	independent	regarding short			
responsibilities for assignments job description • Listen to understand				responsibilities for	assignments	job description		 Listen to understand 	
the job? texts in the IT and complete the				the job?		texts in the IT		and complete the	
3. How can you field.				3. How can you		field.		exercise from a short	
succeed in dialogue on 11 jobs.				succeed in		e lietere		dialogue on 11 Jobs.	
<i>pursuing your</i> • listen, ducany is to 2				pursuing your		 listen, 		 listen and identify the 	
dream job? Understand and differences between				aream job?		understand and		, differences between	
4. Do you think it complete the oversite from a one job and another				4. DO YOU THINK IT		complete the		one job and another	
achieve your short dialogue by filling in the table.				is possible to		short dialoguo		by filling in the table.	
dragm joh2 why				draam joh2 why		on IT jobs			
(not)				(not)		UITT JUDS.		 read, understand and 	
• listen and complete the exercise						 listen and 		complete the exercise	
identify the from the text Industry				Learning		identify the		from the text Industry	
methods: differences Overview on IT				methods		differences		Overview on IT	
Classic between one job				• Classic		between one job		Careers	
discussion and another by • Find explicit and				discussion		and another by		 Find explicit and 	
filling in the implied information						filling in the		implied information	
• Discovery table. related to the text				 Discovery 		table.		related to the text	
learning above.				learning		• read		above.	
understand and						understand and			





			 Contextual learning Case study 		complete the exercise from the text <i>Industry</i> Overview on IT		 understand and apply to explain the requirements. 	
			 Role play Project based learning Presentation 		 Find explicit and implied information related to the text above. 		 write down about the desired job and plans to make it happen. change the script above into a short video. 	
					 understand and apply Modals to define requirements. 			
					 write down about the desired job and plans to make it happen. 			
					 The script above is then converted into a short video. 			
14-15	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic 	7. Topic 7: IT Support Staff 7.1. Common computer problems and their solutions 7.2. Grammar Study: Modals 7.3. Writing a report 7.4. Grammar Study:	Forms of Learning: Face to Face Offline/Online Task: Multiple Choice Questions at LMS. Learning	8 x 50 minutes consist of 2 x 50 minutes face to face online 3 x 50 minutes	 By using English students can: identify problems related to computers and their solutions. listen, understand, and mention 6 	 Criteria: Precision and mastery Form of assessment: Oral test: role play exercise The written test is in the form of 	 Accuracy and mastery of student communication using English in: identify problems related to computers and their solutions. listen, understand, and mention 6 different computer 	5%





IT Support	Discussion	structured	different	multiple choice	problems based on	
Staff .	Drohlom based	assignments	computer	questions.	dialogue.	
	Propletti Dased learning		problems based		listen understand	
	learning	3 x 50	on dialogue.		and answer questions	
	Contextual	minute	● listen.		about computer	
	learning	independent	understand, and		problems and their	
	Role	assignments	answer		solutions based on	
			questions about		dialogue between the	
	play/sinulation		computer		consumer and the IT	
			problems and		help desk.	
			their solutions		• correctly understand	
			based on		and apply the Module	
			dialogue		for Speculation and	
			between the		Deduction .	
			consumer and			
			the fi help desk.		 listen, understand, 	
			 correctly 		and complete	
			understand and		dialogue transcripts	
			apply the		problems and their	
			Modals for		solutions based on	
			Speculation and		dialogue.	
			Deduction .		alaloguei	
			 listen, 		 Mention and 	
			understand, and		complete the table	
			complete		about various	
			dialogue		problems related to	
			transcripts		to solve these	
			regarding		nrohlems	
			computer		problems.	
			problems and		 listen to conversations 	
			their solutions		between IT	
					technicians and	
			ulalogue.		customers and	
			 Mention and 		identify the forms of	
			complete the		questions (WH-	





		table about	Questions and Yes /
		various	No Questions) what
		problems	technicians express to
		related to	find out the problems
		computers and	encountered by the
		how to solve	customer.
		these problems.listen to	• study the form commonly used by IT
		conversations	technicians in
		between IT	recording customer
		technicians and	problems submitted
		customers and	via telephone and
		identify the	understand the terms
		forms of	contained in the form.
		questions (WH- Questions and Yes / No Questions) what technicians express to find out the problems encountered by the customer.	 listen back to the conversation and complete the contents of the form to identify the problems faced by the customer. practice dialogue between <i>customer</i>
		• study the form commonly used	and technician based on the given situation.
		by IT technicians in recording customer problems submitted via telephone and understand the terms contained in the form.	• read a short report consisting of 3 paragraphs written by IT technicians about customer problems and solutions that have been provided and identify what is written in each





				 the conversation and complete the contents of the form to identify the problems face by the custom practice dialogue between customer and technician bass on the given situation. read a short report consist of 3 paragraph written by IT technicians about customer problems and solutions that have been provided and identify what is written in each paragraph in the report. 	on f d er. ed ing is er he	 write a short report consisting of 3 paragraphs about customer problems in the activity above. understand and apply <i>conjunctions</i> correctly. identify suggestions and sentence forms used by IT technicians in providing solutions to these customer problems and take turns playing roles with classmates. read e-mails about computer-related problems and as a technician then explain the solution to the problem. write emails regarding recommended solutions based on the problems above.
--	--	--	--	--	--	--





					 understand and apply conjunctions correctly. identify suggestions and sentence forms used by IT technicians in providing solutions to these customer problems and take turns playing roles with classmates. read e-mails about computer- related problems and as a technician then explain the solution to the problem. write emails regarding recommended solutions based on the problems above. 				
16	 Mastering and applying oral and written communication techniques 	 8. Topic 8: Workstation Health and Safety 8.1. Health and Safety Problems. 	Forms of Learning: Face to Face Offline/Online	4 x 50 minutes consist of	By using English students can:observe and in pairs identify	Criteria: Precision and mastery Form of assessment:	Accuracy and mastery of student communication using English in: • Observe and in pairs identify safety	5%	








17	 prohibitions correctly. read and understand a list of safety rules regarding computer use in a company and discuss any rules that need to be added. making posters related to Workstation Health and Safety (K3). 	making posters related to Workstation Health and Safety (K3).
± /	UAS	2370

Information :

Basic Programming

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MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING





SEMESTER LEARNING PLAN (RPS) SUBJECT CODE **COURSE CULTURE** WEIGHT (credits)/hour SEMESTER DATE. PREPARATION **Basic Programming** 2 credits/ 4 hours RTI221009 **Basic Informatics** 1 December 20, 2021 **AUTHORIZATION MMK Coordinator Ka PRODI RPS Developer Lecturer** Maybe Astiningrum, ST, M, Kom Maybe Astiningrum, ST, M. Kom Imam Fahrur Rozi, ST., MT. Learning Achievement (CP) Learning Outcomes of Study Program Graduates (CPL-Prodi) **S8** Internalize academic values, norms, and ethics. **S9** Demonstrate a responsible attitude towards work in the field of expertise independently. **PP1** Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth. KU2 Able to demonstrate independent, quality and measurable performance. Learning Outcomes Graduates charged to courses (CPL-MK) Mastering the basic concepts of programming as part of basic knowledge of ICT ; Mastering the concepts of Algorithms, Algorithmic Representations, Translators, Programming Languages, Data Types, Variables, Constants, Values, Expressions, Input-Output, Sequences, Case Analysis, Branching, Looping, Arrays, Functions/Procedures. Able to demonstrate independent, quality and measurable performance by taking into account academic values, norms and ethics in designing algorithm concepts. **SUB-CPMK 1** Students know the basic concepts of algorithms and are able to analyze simple problems in the form of algorithms [C2, A3] – Week 1-2 SUB-CPMK 2 Students understand and are able to explain Data Types, Variables, Input-output, Sequences, Operators (Arithmetic Assignment, Joint Assignment, Increment, Decrement, Relational, Logic, Conditional, Bitwise, Casting) and are able to apply them in writing algorithms [C4, A3] – Week 3 **SUB-CPMK 3** Students are able to explain the concepts of simple and nested selection, and are able to write selection algorithms to complete case studies using flowcharts [C4, A3, P2] – Week 5-6 SUB-CPMK 4 Students are able to understand simple looping algorithms and nested loops, and be able to describe case study problems using flowcharts [C4, A3, P2] – Week 7-8





		SUB-CPMK 6 Stud	dents are able to able to apply the	explain em in co	the concept of ite	rative and recursive function olving algorithms [C4, A3, P2]	is, create / declare fu] – Week 13-14	nctions, call functions and	
Short Co	ourse Descriptions	Fundamentals of Pr course students ha	ntals of Programming provides knowledge and understanding of the basic concepts of algorithms and basic programming so that in this udents have the basis for solving logical problems using flowcharts and pseudocode.						
Learning	Learning Materials / Subjects Concept of Algorithm, Programming Language, Data Type, Variable, Constant, Value, Expression, Input-Output, Sequence, Case Analysis, Selection, Loop, Array, Function					ection,			
Referen	ces	Main : 1. Sebesta, Robert 2. Sestoft, Peter, 2 3. T. Henny Febria Supporters:	t, 2016. Concept 2017. Programmi Ina Harumy, 2010	of progr ing Lang 6. Learni	ramming language uage Concepts, Sp ing Basic Algorithn	s global edition, Addison We ringer, Publ. ns and C++ Programming , De	sley, Publ. eepublish.		
	Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher								
Instructional Media Software : 1. Microsoft Of 2. Adobe Reade 3. Sublime 4. IDK		Office der	PCs/Lap	tops					
Name of	f Lecturer								
Require	ments Course								
Week To	Planned Final Capabilities (Sub-CP-MK)	Study material (Learning materials)	Learning Form Methods	s and	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weigh t (%)
(1) (2) (3) (4					(5)	(6)	(7)	(8)	(9)
1-2	Image: Concepts of algorithms and are able to analyze simple problems in the form of algorithms [C2, A3] • Programming Basic Concepts of Learning methods: • Students know the basic to Face and Structured assignments. By studying Basic Programming material students can: • Criteria: • Understand the meaning and importance of algorithms 3.3%								





3	Students understand and are able to explain Data Types, Variables, Input- output, Sequences, Operators (Arithmetic Assignment, Joint Assignment, Increment, Decrement, Relational, Logic, Conditional, Bitwise, Casting) and are able to apply them in writing algorithms [C4, A3]	 Data Type Variable Input-Output Sequences Operator (Arithmetic Assignment, Concatenated Assignment, Increment, Decrement, Relational, Logical, 	Contextual Teaching and Learning (CTL), Problem Based Learning Assignment: Task 1: complete a simple case study and provide analysis Task 2: complete the case study (sequence, selection, repetition) Forms of Learning: Online or Offline (Online/Offline) Learning methods: Contextual Teaching and Learning (CTL), Problem Based Learning Assignment: Task 3: Complete case studies on types and operators	2 x 2 x 70" Self Duty. 1 x 2 x 100" Face to Face and Structured assignments. 1 x 2 x 70" Self Duty.	 Explain the importance of algorithms Solve the problems that exist in the case study and provide analysis Solve the problems that exist in the case study and identify inputs, processes, and outputs By studying data types and operators, students can: Identify the concept of data types, variables, input- output, sequences, and operators. Implement the concepts of data types, variables, input- output, sequences, and operators to solve problems / case studies. 	 Form of assessment: Active group discussion includes asking and answering questions Accuracy of task answers Criteria: Precision and mastery Form of assessment: Active group discussion includes asking and answering questions Active group discussion includes asking and answering questions Accuracy of task answers 	 concepts of algorithms Understand the input, process, and output of case study problems (sequence, selection, repetition) understand and be able to explain about Data Types understand and be able to explain about Variables explain and be able to explain about Input-output put forward and be able to explain about the Sequence understand and be able to describe the Operator 	3.3%
4	Quiz 1	Econditional, Bitwise and Casting Week 1-3 Material	Theory Exam – Multiple Choice and or Essay, Closed Book nature		Able to work on exam questions with week 1-3 material independently.	Exam	Accuracy of answers with Answer Key	10%
5-6	Students are able to explain the concepts of simple and nested selection, and are able to write selection algorithms to complete case studies using flowcharts [C4, A3,P2]	Selection 1 (if, ifelse, ifelse if, switchcase) Logic expression Nested selection	Forms of Learning: Online or Offline (Online/Offline) Learning methods: Contextual Teaching and Learning (CTL), Problem Based Learning	2 x 2 x 100" Face to Face and Structured assignments. 2 x 2 x 70" Self Duty.	 By studying election material 1 students can: 1. Explain the concept of selection 1 2. Implementing the concept of selection algorithm 1 to solve problems / case 	Criteria: Precision and mastery Form of assessment: • Active group discussion	 Knowing about the concept of selection algorithm 1 Understanding the difference in the syntax of select 1 (ifelse and switch case) The accuracy of the flowchart depiction using the selection 	3.3%





			Assignment: Task 4 : Complete a case study about selection 1 by describing a flowchart Task 5 : Complete a case study on nested selection by illustrating a flowchart		 studies. Using logical expressions in select syntax Implement the concept of a pick 2 algorithm to complete a case study 	includes asking and answering questionsAccuracy of task answers	 concept 1 The accuracy of the selection 1 algorithm in solving problems in case studies. Knowing the use of logical operators in the form of logical expressions in the selection syntax Understand the concept of nested selection algorithms Accuracy of flowchart depiction to solve nested selection case studies 	
7-8	Students are able to understand simple looping algorithms and nested loops, and be able to describe case study problems using flowcharts [C4, A3, P2]	 Looping Concept Nested Loops 	Forms of Learning: Online or Offline (Online/Offline) Learning methods: Contextual Teaching and Learning (CTL), Problem Based Learning Assignment: Task 6: Complete the case study about iteration of part 1 by illustrating the flowchart Task 7: Complete a case study about nested loops by describing a flowchart	2 x 2 x 100" Face to Face and Structured assignments. 2 x 2 x 70" Self Duty.	 By studying repetition 1 material students can: 1. Explain the concept of repetition part 1 2. Implementing the iterative algorithm concept part 1 to solve problems / case studies. 3. Explain the concept of nested loops 4. Implementing the concept of nested loop algorithms to solve problems / case studies. 	 Criteria: Precision and mastery Form of assessment: Active group discussion includes asking and answering questions Accuracy of task answers 	 Understanding the looping algorithm part 1 Understand how to provide a simple example for the iterative form case study part 1 The accuracy of the description of the iterative case study problem in part 1 using a flowchart Understand nested loop algorithms Understand how to provide simple examples for case studies of nested looping forms The accuracy of the description of nested iteration case study problems using 	10%





								F
							flowcharts	
9	UTS	Week 1-8 Material	Theory Exam – Multiple Choice and or Essay, Closed Book nature		Able to work on exam questions with week 1-3 material independently.	Exam	Accuracy of answers with Answer Key	30%
10-11	Students are able to understand the concept of 1-dimensional and 2- dimensional arrays, and are able to complete case studies using 1-dimensional and 2-dimensional arrays	 Arrays concept 1 Dimensional Arrays 2D Arrays 	 Forms of Learning: Online or Offline (Online/Offline) Learning methods: Contextual Teaching and Learning (CTL), Problem Based Learning Assignment: Task 8: Declares a 1- dimensional array Performs simple operations on 1- dimensional arrays Implementing a 1- dimensional array in the case study of searching and sorting Task 9: Complete case studies using 2-dimensional arrays 	2 x 2 x 100" Face to Face and Structured assignments. 2 x 2 x 70" Self Duty.	 By studying Array 1 material students can: Explain the concept of 1- dimensional arrays Implementing the concept of 1-dimensional arrays to complete searching and sorting case studies Explain the concept of 2- dimensional arrays Implementing the 2D array concept to complete the matrix case study 	 Criteria: Precision and mastery Form of assessment: Active group discussion includes asking and answering questions Accuracy of task answers 	 able to understand the concept of 1-dimensional arrays able to give examples of the use of 1-dimensional arrays able to solve simple searching and sorting case studies able to understand the concept of 2-dimensional array able to give examples of the use of 2-dimensional arrays able to complete matrix case studies and others 	3.3%
12	Quiz 2	Week 10-11 Material	Theory Exam – Multiple Choice and or Essay, Closed Book nature		Able to work on exam questions with week 1-3 material independently.	Exam	Accuracy of answers with Answer Key	10%
13-14	Students are able to explain the concept of iterative and recursive functions, create / declare functions, call functions and are able to	 Function Concept Iterative Functions 	Forms of Learning: Online or Offline (<i>Online/Offline</i>) Learning methods:	2 x 2 x 100" Face to Face and Structured assignments.	By studying function 1 material students can: 1. Explain the concept of	Criteria: Precision and mastery	 Knowing about the concept of function 1 Understand function usage (parameterized function or not 	3.3%





	apply them in compiling problem solving algorithms [C4, A3, P2]	Recursive Function	Contextual Teaching and Learning (CTL), Problem Based Learning Assignment: Task 10: Complete a case study by making a flowchart in which there are functions Task 11: Complete a case study on recursive functions by creating a flowchart	2 x 2 x 70" Self Duty.	 Function 1 Implementing the concept of function 1 in a case study Explain the concept of function 2 Implement the recursive function concept to complete the case study 	 Form of assessment: Active group discussion includes asking and answering questions Accuracy of task answers 	 and function returns value/return value or not) The accuracy of the flowchart depiction using the function Understand the concept of recursive functions Know the difference between recursive functions and iterative functions Accuracy of flowchart depiction to solve recursive function case studies 	
17	UAS	Week 1-14 Material	Theory Exam – Multiple Choice and or Essay, Closed Book nature		Able to work on exam questions with week 1-3 material independently.	Exam	Accuracy of answers with Answer Key	30%





Programming Basic Practicum



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION
Programming Basic	RTI221007	Basic Informatics	3 credits / 6 hours	1	August 27, 2021
Practicum					
AUTHORIZATION	RPS Developer Lect	urer	MMK Coordinator	Ka PRODI	
	Imam Fahrur Rozi, S	ST., MT.	Maybe Astiningrum,	Imam Fahrur Rozi, ST., MT	
	Maybe Astiningrum	, ST., M.Kom.	ST., M.Kom.		
	Noprianto SKom., N	1Eng.			
	Mamluatul Hani'ah	, S.Kom., M.Kom.			
	Ika Kusumaning Put	ri, S.Kom., MT			
	Vivin Ayu Lestari, S.	Pd., M.Kom			
	Adevian Fairuz Prat	ama, S.ST, M.Eng			
	Vivi Nur Wijayaning	rum, S. Kom, M. Kom			
Learning Achievement (CP)	Learning Outcomes	s of Study Program Graduates	s (CPL-Prodi)		
	S8 Internalize ac	ademic values, norms, and eth	nics.	·	
	S9 Demonstrate	a responsible attitude toward	s work in the field of exp	ertise independently.	
	KK1 Able to apply engineering p and technolog	applied mathematics, comput rinciples in the fields of softw gy fields (vision - graphics, em	tational knowledge (Algor are development (deskto bedded, Information Syst	rithms, Programming and Da p, web and mobile), compu ems, Intelligent systems, Bu	atabases), engineering science, and ter networks and other ICT / science Isiness Intelligence, etc).
	KU1 Able to apply	logical, critical, innovative, qu	ality, and measurable thi	nking in carrying out specifi	c work in their field of expertise and in
	accordance w	ith work competency standar	ds in the field concerned.		
	KU2 Able to demo	nstrate independent, quality a	and measurable performa	ance.	





	Learning Outcomes Graduates charged to courses (CPL-MK)
	Able to apply the basic concepts of programming, namely sequences, selection, looping, arrays and functions using the Java programming language
Short Course Descriptions	; Able to make programs according to case studies / simple problems with responsibility and promote academic values, norms and ethics.
Short Course Descriptions	nogramming language program texts
Learning Materials / Subjects	1. Algorithm concept
	2. Algorithm Representation
	3. Translator
	4. Programming language
	5. Data Type
	6. Variable
	7. Constant
	8. Mark
	9. Expression
	10. Input-Output
	11. Sequences
	12. Case Analysis
	13. branching
	14. loop
	15. Arrays
	16. Functions/Procedures
References	Main :





		1. Sebesta, Robert	, 2016. Concept of prog	ramming langua	ges global edition, Addison We	esley, Publ.		
		2. Sestoft, Peter, 2	017. Programming Lang	guage Concepts,	Springer, Publ.			
		3. T. Henny Febria	na Harumy, 2016, Learr	ning Basic Algorit	hms and C++ Programming . D	eepublish.		
	_	• • •				ceptioni		
		Supporters:						
		1. Rinaldi Munir, 2	015, Algorithm and Pro	gramming, Infor	matics Publisher			
Instruct	ional Media	Software :	Hardwa	re :				
		JDK	PCs/Lap	tops				
		IDEA						
		Microsoft Office						
	••••	Adobe Reader						
Name o	t Lecturer	1. Imam Fahru	r Rozi, ST., MT.					
		2. Maybe Astiningrum, ST., M.Kom.						
	 Sebesta, Nobelt, 2018: Contrept of programming languages group entition, Audison Wesley, Publ. Sestoft, Peter, 2017. Programming Language Concepts, Springer, Publ. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish. Supporters: I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher I. Imam Fahrur Rozi, ST., MT. Marbusth Hani'ah, S.Kom, M.Kom. I. Imam Fahrur Rozi, ST., MT. Marbusth Hani'ah, S.Kom, M.Kom. I. Kastusumaning Putry, S.Kom, M.Kom. I. Ka Kusumaning Putry, S.Kom, M.Kom. I. Ka Kusumaning Putry, S.Kom, M.Kom. Adevian Fairuz Pratama, S.ST, M.Eng. Vivi Nur Wijayaningrum, S. Kom, M. Kom Adevian Fairuz Pratama, S.ST, M.Eng. Vivi Nur Wijayaningrum, S. Kom, M. Kom Adevian Fairuz Pratama, S.ST, M.Eng. Vivi Nur Wijayaningrum, S. Kom, M. Kom Adevian Fairuz Pratama, S.ST, M.Eng. Vivi Nur Wijayaningrum, S. Kom, M. Kom Conduct material Scoting criteria ubic Reseasement Criteria & Assessment Indicator (Gitteria: Scoting criteria ubic negaming laguage, concept programming loaguage concepts, programming loaguage concepts, programming loaguage concepts, programming loaguage concept and answers (Qitteria Ubic negaming laguage concept to the josteet							
		 Maybe Astiningrum, ST., M.Kom. Noprianto SKom., MEng. Mamluatul Hani'ah, S.Kom., M.Kom. Ika Kusumaning Putri, S.Kom., MT Vivin Ayu Lestari, S.Pd., M.Kom 						
		5. Ika Kusumar	ning Putri, S.Kom., MT					
		6. Vivin Ayu Le	stari, S.Pd., M.Kom					
		7. Adevian Fair	uz Pratama, S.ST, M.En	g				
D		8. VIVI NUR WIJ	ayanıngrum, S. Kom, M.	кот				
Require	ments Course	Ctudu material		Estimated time	Ctudent Learning Evaniance	Accession of Critoria		Wainh
vveek	(Sub-CP-MK)	(Learning	Methods	Estimated time	Student Learning Experience	& Forms	Assessment indicator	t (%)
(4)	(0)		(4)	(5)	(0)	(7)	(0)	(0)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	able to explain	Programming	Form:	1X6X50 " _	1. Conduct material review with	Criteria:	Accuracy in installing Java	1.8 %
	about program concepts,	language	Online Lectures (Online) /		supporting lecturers	Scoring criteria rubric	programming tools	
	compilers, debugging,	Programming	Omme (Omme)		2. Carry out the trial steps for	Form of	Student activity in conducting	
	interpreters,	language	Method :		installing the Java	assessment:	online discussions (questions	
	I. Rinaldi Munir, 2015, Algorithm and Programming, Informatics Publisher software : Hardware : Very Software : Hardware : Very Software : Hardware : D/C D/C D/C D/C D/C PC/Lightops Very Software : Hardware : Very Software : Software :							
	basic structure					worksneets		





		 Java programming language Compilers and debugging Java programming tools installation 	Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 1 : Complete the java installation jobsheet		3.	Able to compile and debug java program syntax Students do practical assignments	Independent task		
2	Students can model case study problems using algorithms (describing input, process, output)	Case study	Form: Online Lectures (Online) / Offline (Offline) Method : Discussion, Problem base Learning (PBL) Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 2 : Complete the case study.Jobsheet	1X6X50 " _	1. 2. 3. 4.	Conduct material review with supporting lecturers Carry out the experimental steps according to the jobsheet Do practical assignments Able to create description algorithms based on existing case studies	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 The accuracy of carrying out the experimental steps The accuracy of answering questions on the jobsheet 	1.8 %





3	Able to apply data types, variables, input-output, sequences, and about Operators (Arithmetic Assignment, Joint Assignment, Increment, Decrement, Relational, Logic, Conditional, Bitwise, Casting) in a program code using Java	Input - output, variable, sequence	Form: Online Lectures (Online) / Offline (Offline) Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 3 : Completing the	1X6X50 " _	 1. 2. 3. 4. 5. 	Conduct material review with supporting lecturers Carry out the experimental steps according to the jobsheet Do practical assignments Able to use Data Types and variables, Input-output, operators to the Java programming language Sequence problems into the Java programming language	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 The accuracy of using Data Types and variables, Input- output, operators to the Java programming language Sequence problems into the Java programming language The accuracy of answering questions on the jobsheet Student activeness in conducting online discussions (questions and answers The accuracy of the program code and output according to the task 	1.8 %	
			input - output, variable, sequence Jobsheet							
4	Material Practice Tests week 1 to 3	Quiz 1		1X6X50 " _					10%	
5	• the if, if-else, else-if and switch-case selection forms into the Java programming language Able to write into the Java program, flowcharts that have been made at the theoretical meeting on basic selection cases	Election 1	Form: Online Lectures (Online) / Offline (Offline) Method : Discussion, Problem base Learning (PBL) Class activities: Practice Media:	1X6X50 " _	1. 2. 3. 4.	Conduct material review with supporting lecturers Students carry out the experimental steps according to the jobsheet Students do practical assignments Able to use election 1 (if, if- else, else-if and switch-case) in the Java programming language	Criteria: Scoring criteria rubric Form of assessment: Practicum worksheets Independent task	 Accuracy of use election 1 (if, if-else, else-if and switch-case) in the Java programming language The accuracy of answering questions on the jobsheet Student activity in conducting online discussions (questions and answers) 	1.8 %	





6	Students are able to write into the Java program, the flowchart that has been made at a theoretical	Election 2	the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 5 : Completing Jobsheet Selection 1 according to the case study on the jobsheet (example: case study to calculate the final grade) Form: Online Lectures (Online) / Offline (Offline)	1X6X50 " _	1.	Conduct material review with supporting lecturers Students carry out the	Criteria: Scoring criteria rubric Form of	·	The accuracy of using selection 2 (nested if) in the Java programming	1.8 %
	meeting about nested selection cases		Method : Discussion, Problem base Learning (PBL) Class activities: Practice Media: Computers and LCD		3. 4.	experimental steps according to the jobsheet Students do practical assignments Able to use selection 2 (nested if) in the Java programming language	 assessment: Practicum worksheets Independent task 	• •	The accuracy of answering questions on the jobsheet Student activity in conducting online discussions (questions and answers) • The accuracy of the program code and output according to the task	
			projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment:							





7	able to make the format of writing a looping program part 1 (for, while, do-while) Students are able to write Java programs based on the flowchart that was made at the theoretical meeting on the looping case part 1	Loop 1	Task 6 : Completing Jobsheet Selection 2 in accordance with the given case study (example of a case study of creating a simple cashier program using nested selection) Form: Online Lectures (Online) / Offline (Offline) Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 7 : Completing the Jobsheet Iteration 1	1X6X50 "	1. 2. 4.	Conduct material review with supporting lecturers Students carry out the experimental steps according to the jobsheet Students do practical assignments Able to utilize the concept of repetition	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Accuracy explains looping part 1 on java programming The accuracy of answering questions on the jobsheet The accuracy of the program code and output according to the task 	1.8 %	
8	Midterm exam			1X6X50 " _					25%	Ĩ
9	Be able to explain the format of writing nested loop programs (for, while, do-while)	Loop 2	Form: Online Lectures (Online) / Offline (Offline)	1X6X50 " _	1. 2.	Conduct material review with supporting lecturers Students carry out the experimental steps according	Criteria: Scoring criteria rubric Form of assessment:	 Accuracy explains nested loops in java programming 	1.8 %	





	Able to write Java programs based on flowcharts that have been made at a theoretical meeting on nested loop cases		Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 9 : Completing the Jobsheet Iteration		3.	to the jobsheet Students do practical assignments	•	Practicum worksheets Independent task	 The precision of modeling basic looping case studies to Java programming The accuracy of answering questions on the jobsheet The accuracy of the program code and output according to the task 	
10	 Able to understand the creation of 1-dimensional Arrays Able to write implementation of 1 dimensional Array and access its elements in the Java programming language . Able to implement searching and sorting (enrichment) 	Arrays 1	2 Form: Online Lectures (Online) / Offline (Offline) Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i)	1X6X50 " _	1. 2. 3. 4.	Conduct material review with supporting lecturers Students carry out the experimental steps according to the jobsheet Students do practical assignments Able to implement 1- dimensional arrays using the Java programming language	Cr Sc Fo as	iteria: oring criteria rubric rm of sessment: Practicum worksheets Independent task	 The accuracy of using 1- dimensional arrays in the Java programming language The accuracy of answering questions on the jobsheet The accuracy of the program code and output according to the task 	1.8 %





11	 Students are able to understand the creation of 2-dimensional Arrays Able to write implementation of 1 dimensional Array and access its elements in the Java programming language. 	Arrays 2	Assignment: Task 10 : Complete Jobsheet Array 1 Form: Online Lectures (Online) / Offline (Offline) Method : Discussion, Problem base Learning (PBL) Class activities: Practice	1X6X50 " _	1. 2. 3. 4.	Conduct material review with supporting lecturers Students carry out the experimental steps according to the jobsheet Students do practical assignments Able to apply the concept of 2-dimensional arrays in the	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 The accuracy of using 2- dimensional arrays in the Java programming language The accuracy of answering questions on the jobsheet The accuracy of the program code and output according to the task 	1.8 %	
	be used matrix operations		Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 11 : Completing Jobsheet Array 2 according to the case study (case study data on height, weight and age, looking for data with the youngest age)			given case studies				
12	Quiz 2) 3	1X6X50 " _					10%	
13	able to implement functions (function data types, function parameters/arguments,	Function 1	Form: Online Lectures (Online) / Offline (Offline)	1X6X50 " _	1. 2.	Conduct material review with supporting lecturers Students carry out the experimental steps according	Criteria: Scoring criteria rubric Form of assessment:	The accuracy of using functions in the Java programming language	1.8 %	



г



	returns) and function calls in Java		Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment: Task 13 : Complete		3.	to the jobsheet Students do practical assignments Able to use functions in the Java programming language	•	Practicum worksheets Independent task	 The accuracy of answering questions on the jobsheet The accuracy of the program code and output according to the task 	
14	able to implement recursive functions and enrichment of function cases	Function 2 (Recursive Function)	Jobsheet Function 1 Form: Online Lectures (Online) / Offline (Offline) Method : Discussion Class activities: Practice Media: Computers and LCD projectors, or gadgets and the internet Learning Resources: LMS (Imsc19.polinema.ac.i) Assignment:	1X6X50 "	1. 2. 3. 4.	Conduct material review with supporting lecturers Students carry out the experimental steps according to the jobsheet Students do practical assignments Able to use recursive functions in the Java programming language	Criti Scc For ass	teria: pring criteria rubric rm of sessment: Practicum worksheets Independent task	 The accuracy of using recursive functions in the Java programming language The accuracy of answering questions on the jobsheet Student activity in online discussions (questions and answers) The accuracy of the program code and output according to the task 	1.8 %





			Task 14 : Completing Jobsheet Function 2						
15	Able to create programs to solve problems	Meeting materials 1-14	 Independent Practice Program Demos 	1x6x50'	1.	Exercises and assignments	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Student activity in online discussions (questions and answers) Program code accuracy and output according to practice 	1.8 %
16	Able to create programs to solve problems	Meeting materials 1-14	 Independent Practice Program Demos 	1x6x50'	1.	Exercises and assignments	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Student activity in online discussions (questions and answers) Program code accuracy and output according to practice 	1.8 %
17	UAS		DemoProjects	1X6X50 " _			Criteria: Scoring criteria rubric		30%





Occupational Health and Safety



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION
		(credits)/hour		
RTI221008	Basic Informatics Course			
		2 credits / 2 hours	1	July 2, 2021
RPS Developer Lec	turer	MMK Coordinator	Ka PRODI	
1. ANUGRAH NUR RAHMANTO		ATIQAH NURUL	IMAM FAHR	UR ROZI, ST., MT
		ASRI, S.PD., M.PD.		
2. ASHRI SHABIR	NA AFRAH, SST., MT			
3. BUDI HARIJAN	ITO, ST., М.МКОМ			
4. CANDRASENA	SETIADI, SST., MT			
5. ROKHIMATUL	WAKHIDA, S.PD., MT			
6. SATRIO BINUS	A S, SS, MPD			
Learning Outcome	s of Study Program Graduates	s (CPL-Prodi)		
-			J	
S8 Internalize	academic values, norms, and	ethics.		
PP5 Mastering l	knowledge about quality assur	rance and occupationa	l safety and he	ealth (K3) principles in ICT product development.
KU2 Able to der	nonstrate independent, qualit	y and measurable peri	formance.	
Learning Outcome	s Graduates assigned to cours	ses (CPL-MK)		
Mastering the knowledge of the principles of occ		upational safety and h	ealth (K3); Abl	le to implement good and quality theories, concepts
and principles of or	cupational safety and health ((K3) in order to improv	ve the health s	tatus of workers by taking into account values.
norms and ethics.	, ,	, , F-		, 6
	CODE RTI221008 RPS Developer Lect 1. ANUGRAH NU 2. ASHRI SHABIR 3. BUDI HARIJAN 4. CANDRASENA 5. ROKHIMATUL 6. SATRIO BINUS Learning Outcomes S8 Internalize PP5 Mastering H KU2 Able to der Learning Outcomes Mastering the know and principles of oc norms and ethics.	CODECOURSE CULTURERTI221008Basic Informatics Course RPS Developer Lecturer 1. ANUGRAH NUR RAHMANTO2. ASHRI SHABIRNA AFRAH, SST., MT3. BUDI HARIJANTO, ST., M.MKOM4. CANDRASENA SETIADI, SST., MT5. ROKHIMATUL WAKHIDA, S.PD., MT6. SATRIO BINUSA S, SS, MPDLearning Outcomes of Study Program GraduatesS8Internalize academic values, norms, andPP5Mastering knowledge about quality assurKU2Able to demonstrate independent, qualitLearning Outcomes Graduates assigned to coursMastering the knowledge of the principles of occand principles of occupational safety and health (norms and ethics.	CODECOURSE CULTUREWEIGHT (credits)/hourRTI221008Basic Informatics Course2 credits / 2 hoursRPS Developer LecturerMMK Coordinator1. ANUGRAH NUR RAHMANTOATIQAH NURUL ASRI, S.PD., M.PD.2. ASHRI SHABIRNA AFRAH, SST., MTASI, S.PD., M.PD.3. BUDI HARIJANTO, ST., M.MKOMACANDRASENA SETIADI, SST., MT5. ROKHIMATUL WAKHIDA, S.PD., MTFor the second seco	CODECOURSE CULTUREWEIGHT (credits)/hourSEMESTERRT1221008Basic Informatics Course2 credits / 2 hours1RPS Developer LecturerMMK CoordinatorKa PRODI1.ANUGRAH NUR RAHMANTOATIQAH NURUL ASRI, S.PD., M.PD.IMAM FAHR ASRI, S.PD., M.PD.2.ASHRI SHABIRNA AFRAH, SST., MTASRI, S.PD., M.PD.3.BUDI HARIJANTO, ST., M.MKOMASRI, S.PD., M.PD.4.CANDRASENA SETIADI, SST., MTIMAM FAHR ASRI, S.PD., M.PD.5.ROKHIMATUL WAKHIDA, S.PD., MTInternalize academic values, norms, and ethics.PP5Mastering knowledge about quality assurance and occupational safety and he Able to demonstrate independent, quality and measurable performance.Learning Outcomes Graduates assigned to courses (CPL-MK)Mastering the knowledge of the principles of occupational safety and health (K3) in order to improve the health s norms and ethics.





Short Course Description	Students know the legislation that forms the basis of all policies related to Occupational Health and Safety. Students understand the scope of health; work environment; work safety; employment insurance and work organizations that are part of a labor system.
Learning Materials/subject matter	 K3 concept; History of occupational health and safety, Definition of K3, Objectives of K3 K3 Law; the law that underlies K3, Government Regulations Public health; basic regulations, Health check before work, Check after work Work environment; Physical and non-physical work environment Work safety; influencing factors, sources of danger, prevention of work accidents Work safety tools K3 organization; goals and objectives of the organization and organizational goals K3 Insurance; basic principles, types and insurance claims BPJS
References	Main : 1. Budi Harijanto, K3 teaching module, 2012 2. Law no. 1 of 1970 concerning work safety 3. Law no.13 of 2003 concerning employment 4. Law no.3 of 1992 (Social security for workers) 5. PP no. 33 of 1977 Supporters: 1. Tresnaningsih, Erna (2008). Occupational Health and Safety. Secretary General of the Indonesian Ministry of Health. Available from; http://www.depkes.go.id. accessed on March 2008.





2.	Yulini, Emma (2002). Introduction to Office Hygiene (Occupational Health and Safety). Available from; http://www.phitagoras.co.id. accessed on March 2008
3.	Dr. Ismojo Djati, MSc, The importance of medical examination before work.
4.	Irga (2008). Occupational Health. Available from; http://www.irwanashari.blogspot.com. accessed on March 2008.
5.	Decree of the Minister of Health No. 61/MENKES/SK/II/1998 Concerning: Work Environment Health Requirements
6.	2006. Occupational Health and Safety. UI-Press. Jakarta.
7.	Public health science. http://id.wikipedia.org/wiki/llmu_kesehatan_masya people accessed on 20 June 2012
8.	Alfarisi Ikhwan Kunto. Occupational Health and Safety in Indonesia Today http://www.wikimu.com/News/DisplayNews.aspx?ID=10693 accessed on 20 June 2012
9.	Medical examination. http://wwwmedicalcheckup.blogspot.com/ accessed on 23 June 2012
10.	Ciliwung Clinical Laboratory. Check up Employees and Prospective Employees. https://labciliwung.wordpress.com/tag/test- kesehatan-calon-karyawan/ accessed on 27 June 2012
11.	Nitisemito Alex S. 2000. Personnel Management: Human Resource Management, Ed. 3, Ghalia Indonesia, Jakarta.
12.	Sedarmayanti. 2001. Human Resources and Work Productivity. Mandar Maju, Bandung.
13.	Work environment. http://repository.usu.ac.id/bitstream/123456789/29386/4/ Chapter%20II.pdf accessed on 27 June 2012
14.	Kurniawan Hendri. 2012. Definition of variables related to Leadership http://www.scribd.com/doc/89930262/4/Lingkungan-Kerja accessed on 29 June 2012
15.	The Influence of Corporate Culture and Work Environment on Employee Performance. http://intanghina.wordpress.com/2008/04/28/pengaruh-budaya-company-dan-environmental-kerja-terhadap-kinerja-karyawan/ accessed on 29 June 2012
16.	Khomsatun Laela. Office Work Climate. http://lael.student.fkip.uns.ac.id/materi/ accessed on 1 July 2012
17.	Cokrominoto. Building Employee Performance Through Improved Work Environment
18.	Buchari. 2007. Occupational Health Management and Personal Protective Equipment, USU Repository,





- 19. Cahyono Achadi Budi. 2004. Chemical Work Safety in Industry. Gadjah Mada UniversityPress. Yogyakarta.
- 20. Department of health. 2008. K3 Health Laboratory. Occupational Health Center http://www.depkes. go.id Access 20 December 2008.
- 21. Handl'ey, E. 1980. Industrial Safety Handbook. McGraw-Hill Book Company England.
- 22. Hammen Willie. 1972. Handbook of System and Product Safety; Prentice Hall Inc
- 23. Harninto, 1994. Physical Factors at Work. Corporate Director Training Papers, October 15-29. Yogyakarta.
- 24. Treasure. 2007. Occupational safety, prevention and control of accidents in the laboratory. Department of Chemistry FMIPA UNAIR.
- 25. Occupational Health and Safety. http://studienvironment.blogspot.com/2011/01/keselamatan-dan-kesehatan-kerja-k3.html accessed on 20 June 2012
- 26. disnakertransduk.jatimprov.Ketenagakerjaan. http://disnakertransduk.jatimprov. go.id/ employment?start=110 accessed on 22 June 2012
- 27. Suwahono. 2010. Source of hazard that has the potential to cause work accidents. http://www.chem-istry.org/materi_kimia/kimia-gratis/manajemen-laboratorium-kimia/ Sumber-bahaya-yang-bepotential-menimbulkan-kecelakaankerja/ accessed on 3 July 2012
- 28. Work Safety Tools and Their Functions. 2011. http://xlusi.com/2011/tools/alat-keselamatan-kerja-dan-fungsinya/ accessed on 3 July 2012
- 29. Insurance. http://id.wikipedia.org/wiki/Asuransi accessed on 3 July 2012
- 30. PT. Indonesian Primary Monument. Asurasni Functions and Objectives. http://www.tugu.com/understanding-insurance/purposeand-objective accessed on 5 July 2012
- 31. PT Jamsostek. 2010. Work Accident Rate Still High. http://www.jamsostek.co.id/content/news.php?id=1031 Thursday 5 July 2012
- 32. PT. KAI Jabodetabek. 2011. Insurance Claim Procedure. http://www.krl.co.id/procedure-klaim-asuransi.html accessed on 5 July 2012
- 33. Social Insurance. http://www.jamsostek.co.id/content/news.php?id=1031 accessed on 20 June 2012





34. Maslow Abraham. Need Theory. http://id.wikipedia.org/wiki/Abraham_ Maslow accessed on 20 June 2012											
		3	5. http://library.binus.a	c.id/eColls/eThesis,	/Bab2/Bab9	%202_09-222.pdf	accessed on 7 July 2012	2			
		3	6. Furqon Chairul. Orga CHAIRUL_FURQON/A	nizational Culture. I rtikel-Organization	http://file.u al_Culture.	pi.edu/Direktori/ pdf accessed on 7	FPEB/PRODIMANAJEN July 2012	1EN_FPEB/197207152003	121-		
		3	 PT. Tira Austenite Tbl k3-july2007.pdf acces 	c. Corporate Safety sed on 9 July 2012	Coordinato	or. K3 Managemer	nt. http://www.tiraauste	enite.com/v3/media/mana	agement-		
		3	8. McShane Steven. 200	9. Organizational E	Behavior. M	cGraw Hill Higher	Education				
		3	9. Robbins, SP 2001. Or	ganizational Behavi	or. Concep	ts, Controversies,	Applications, 8th.ed. Ne	ew Jersey: Prentice Hall Ind	с		
Instruct	ional Media	Softw	vare :	Hardware :							
				Notebooks 8	k LCD Proje	ctors					
Name o	f Lecturer	1. B	JDI HARIJANTO, ST., M.I	ИКОМ							
		2. SA	ATRIO BINUSA S, SS, MP	D							
		3 4	SHRI SHARIRNA AFRAH	SST MT							
		Э. Д.		551., 1011							
		4. C/	ANDRASENA SETIADI, SS	T., MT							
		5. R	OKHIMATUL WAKHIDA,	S.PD., MT							
Require	ments Course										
Week	Planned Final Capabi (Sub-CP-MK)	lity	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)			
1	 Stude know the history of OSH development Indonesia, and are to explain why K3 needs to be studie 	nts of in able ed by	OSH definition, history of OSH, objectives of OSH, meaning of OSH symbol	 Shape : Online Lectures Method : 	3 X 50″	 Understand, about the K3 symbol and the meaning of the symbol, 	Criteria : Grading criteria rubric Non-test form :	 Accuracy in explaining the history of K3; 	1.5%		





_	a student.		group discussion		know the history and purpose of K3 (Task-1)	• Task report	 Accuracy in explaining the meaning of K3 Systematics and form of task reports 	
2	 Students know the legal basis for employment in Indonesia, and are able to explain the policies that underlie employment in Indonesia from each President, are also able to explain the link between employment policies and occupational health and safety (K3). 	K3 Legal Basis During Past and Present Governments	Form: Online Lectures Method: Inquiry	3 X 50″	 Understand the laws and legal basis of K3. (Task-2) 	Criteria : Accuracy, suitability and systematics Non-test form : • K3 Legal Basis Task Report;	• Accurate understanding of the legal basis of K3	1.5%
3	• Students know the legal basis for Health Requirements for the Work Environment, and understand what is meant by the Physical Work Environment.	 Physical work environment Which consists of direct and intermediary physical work environment 	Form: Online Lectures Method: Contextual Learning	3 X 50″	Make animated slides related to the topic of discussion (work environment) (Task-3)	Criteria : Accuracy, conformity with the material discussed Non-test form : • Make animated slides about the work environment in K3	 Accurate understanding of the physical and non- physical work environment 	1.5%
4	QUIZ	QUIZ	Form:	3 X 50"	QUIZ	QUIZ	QUIZ	10%





			Online Quiz					
			Method: Writing test					
5	 Students know the legal basis for the requirements for Occupational Health, and understand what is meant by a Non- Physical Work Environment. 	Employee Relations at Work and outside the Workplace	Form: Online Lectures Method: Collaborative Learning	3 X 50"	Make animated slides related to the topic of discussion (work environment) (Task-4)	Criteria : Accuracy, conformity with the material discussed Non-test form : • Make animated slides about the work environment in K3	 Accurate understanding of the physical and non- physical work environment 	1.5%
6	 Students know the factors that affect work safety, Hazard Sources that Potentially Cause Work Accidents, Prevention of work accidents and know work safety equipment. 	Hazard Sources and Work Accident Prevention	Form: Online Lectures Method: Role-Play and Simulation	3 X 50″	Demonstrating several First Treatment efforts at Work Accidents (Task-5)	Criteria : Accuracy, conformity with the material discussed Non-test form : • suitability for the role	 Accurate understanding of work safety in K3 	1.5%
7	 Students know the factors that affect work safety, Hazard Sources that Potentially Cause Work Accidents, Prevention of work accidents and know work safety equipment. 	Factors Affecting K3	Form: Online Lectures Method: Role-play and simulation	3 X 50"	Demonstrating several First Treatment efforts at Work Accidents (Task-6)	Criteria : Accuracy, conformity with the material discussed Non-test form : • suitability for the role	 Accurate understanding of work safety in K3 	1.5%





8	UTS	UTS	Form: UTS Online Method: Written Exam	3 X 50"	UTS	UTS	UTS	20%
9	 Students know the legal basis for implementing occupational health for workers, as well as the benefits of pre- employment health checks and post-work health checks 	OSH Setting Basics	Form: Online Lectures Method: Discovery Learning	3 X 50"	Write a paper related to public health (Assignment- 7)	Criteria : Accuracy, conformity with the material discussed Non-test form : • Paper assignment report	 Accurate understanding of occupational health in K3 	1.5%
10	• Students know the legal basis for implementing occupational health for workers, as well as the benefits of pre- employment health checks and post-work health checks	Pre-work Health Examination and After Work Examination	Form: Online Lectures Method: group discussion	3 X 50"	Write a paper related to public health (Assignment- 8)	Criteria : Accuracy, suitability with the material discussed Non-test form : • Paper assignment report	 Accurate understanding of occupational health in K3 [0 	1.5%
11	 Students know what safety equipment must be used at work 	Work Safety Tools	Form: Online Lectures Method: Collaborative Learning	3 X 50″	Make animated slides related to personal protective	Criteria : Accuracy, conformity with the material discussed Non-test form :	 Accurate understanding of work safety equipment 	1.5%





					equipment (Task-9)	 Work safety equipment animation slides 		
12	Quiz II	Evaluation	Form : Online Quiz Method: Written Exam	3 X 50"	Quiz II	Quiz II	Quiz II	10%
13	 Students know what safety equipment must be used at work 	OSH Organizational Definition and Objectives	Form: Online Lectures Method: Collaborative Learning	3 X 50"	Make animated slides related to personal protective equipment (Task-10)	Criteria : Accuracy, conformity with the material discussed Non-test form : • Work safety equipment animation slides	 Accurate understanding of work safety equipment 	1.5%
14	 Students know the intent and purpose of establishing OSH organizations in Indonesia, and are able to explain the organizational structure of OSH and its duties and functions. 	OSH Organizational Structures	Form: Online Lectures Method: Cooperative Learning	3 X 50"	Explaining the OSH organizational structure along with the main tasks and functions of each (Task 11)	Criteria : Accuracy, conformity with the material discussed Non-test form : • suitability for reporting	 Accurate understanding of the K3 organizational structure 	1.5%
15	 Students know the Legal Basis of Insurance in Indonesia, and are able to explain 	Basic Principles, Types, and Insurance Claims	Form: Online Lectures Method:	3 X 50″	Make a paper related to insurance which includes the types of	Criteria : Accuracy, conformity with the material discussed	 Accurate understanding of Insurance 	1.5%





	the function of insurance, types of insurance and know insurance claim procedures		Contextual Learning		insurance and how the procedure for insurance claims (Assignment 12)	 Non-test form : suitability for reporting 		
16	 Students know about BPJS 	Rights, Obligations, and Benefits for BPJS Participants	Form: Online Lectures Method: Inquiry	3 X 50"	Make papers related to BPJS (Task 13)	Criteria : Accuracy, conformity with the material discussed Non-test form : • suitability for reporting	 Accurate understanding of BPJS 	1.5%
17	Final exams	Evaluation	Form : Online Test Method: Written Exam	UAS	UAS	UAS	UAS	40%





Semester 2

1. Religion



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION					
			(credits)/hour							
Religion	RTI222001	Basic Informatics	2 credits/ 3 hours	2	16 FEBRUARY 2017					
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI						
	Sri Nur Kudri, Dra.,	M.Pd.	Ahmad Bahaudin	Ir. Deddy Kusbianto PA., MMKom.						
			Almufaro, M.Pd.I							
Learning Achievement (CP)	Learning Outcome	s of Study Program Graduate	s (CPL-Prodi)							
	Mastering the concepts of faith and piety, knowledge and noble character and making Islamic teachings the basis for thinking and									
	behaving in profess	sional development.								
	Learning Outcome	s Graduates charged to cours	ses (CPL-MK)							
	After the end of Isl	amic religious studies, polyte	chnic students will be a	ble to implem	ent Islamic values in campus, nation and state life.					
Short Course Descriptions	Lectures on Islamic	Religion at the Polytechnic o	f Brawijaya University e	emphasize and	present Islamic teachings that are related to the					
	realities of everyda	y life. This has implications fo	or substantive and cont	emporary Islai	nic studies on the integrity of Islam as the Religion of					
	Rahmatan Lil Alam	in, and also attempts to remo	ve the impression of a	dichotomous	Islamic understanding such as regarding the world					
	and the hereafter.	work and worship, thought a	nd dhikr. Religion lectu	re material bro	badly covers three areas of issues, namely around the					
	Issues of God (Agid	lah/Tawhid). Humans and the	Universe and their im	olications. Lect	ture materials start from the human need for					
	religion monotheig	sm humans the universe sci	ence self-nurification	Islam and dev	elonment and ends with the formation of a Sakinah					
	Family (marriage)									
Learning Materials / Subjects	Poligion as a huma	n need Islam and openness o	funderstanding Islam	as a religion o	f marcy the concept of divinity in Islam, the concept					
Learning Waterials / Subjects	of humanity in Isla	m the embediment of civil co	vi unuerstanuing, Isidiii	as a religion o	i mercy, the concept of divinity in Islam, the concept					
		ii, the embouiment of CIVII so	ciery, family and marna	aman society						





Referer	nces	Main	:									
 Fadloli, Sri Nurkudr Al-Qur'an and its Tr 				ind Abdul Chalim, slation, Jakarta, M	2013, Islar linistry of F	nic Religious Edı Religion.	ucation, Teaching Modu	ıle, Polynema, Malang.				
Supporters:												
		1. 2.	Chaney, David (ed.Idi S Hossein Nasr, Sayyed, 2 Bandung.	Subandy Ibrahim) 2003, The Heart Of	l, 2005, Life Islam, Islam	e styles A Compre n's Universal Mess	ehensive introduction, j sages for Humanity (trar	alasutra, Jogjakarta. ıs. Nurasiah Faqih), Mizar	ı <i>,</i>			
Instructional Media		Softw	Software : Hardware :									
				Projector								
Name o	of Lecturer											
Require	ements Course											
Week	Planned Final Capab (Sub-CP-MK)	ility	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)			
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)			
1	1 After studying Islam on this subject, students will be able to explain the importance of religion for humans well		 Religion Human Needs The Future of Religion Religion in the Modern Era 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	Able to create static web pages using bootstrap	1.5%			





		Religion						
2-3	After studying Islam on this subject, students will be able to explain the true nature of Islam	 Religion and Islam concept Dimensions of Islamic Teachings Sources of Islamic Teachings Methods of Understanding Islam Islamic Religious Goals Society and Plurality in Islam 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	 Able to create static web pages using bootstrap Able to link static pages with controllers 	1.5%
4	After studying Islamic religion on this subject, students will be able to analyze the Tawhid sentence correctly	 Monotheism of Human Needs Human Problems: Shirk How to Instill Aqidah The meaning of Tawhid 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	 Able to create models and configure databases Able to display data on web pages 	1.5%





		 Proof of True Tawheed Impact of Tawhid 						
5	QUIZ	– QUIZ	QUIZ	3 X 45″	QUIZ	QUIZ	• QUIZ	1.5%
6-7	After studying Islamic religion on this subject, students will be able to emulate the character of the apostle's struggle well	 The Meaning o the Apostle's Struggle Actualization o the Apostle's Mission Prophet's Attributes Application Civil society an the ethics of Islamic society 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	QUIZ	1.5%
8	After studying Islamic religion on this subject, students will be able to explain the nature of the mission of human life in Islam properly	 Humans in Islam The Essence of Life in the World and the Hereafter Human Function 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	Able to create simple CRUD applications using Codelgniter	15%





		 Actualization of Destiny 						
9	UTS	– UTS	UTS	3 X 45″	UTS	UTS	UTS	1.5%
10-11	After studying Islamic religion on this subject, students will be able to show the relationship about the unity of the Qauliyah and Kauniyah verses in Islam correctly	 The Nature of the Inner Universe Islam The Meaning And And Nature Of Sunnatullah How to Understand Sunnatullah Benefits of the Universe 	Lectures and discussions	3 X 45″	Exercises and assignments	Task completion	Able to add validation features to CRUD applications that have been made before	1.5%
12-13	After studying Islam on this subject, students will be able to explain the nature of knowledge in true Islam	 The Essence of Knowledge in Islam Knowledge Resources Development of Ijtihad Dhikr And Thought 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	 Able to install the datagrid library Able to create simple CRUD applications using datagrid 	1.5%





		Pattern Application						
14-15	After Lectures on Islamic religion on this subject, students will be able to explain the importance of building spiritual intelligence in Islam well	 How to Purify Yourself The Meaning and Essence of Prayer Fasting, Zakat, Hajj, Dhikr And Prayer Sufism And Social Harmony 	Lectures and discussions	3 X 45″	Exercises and assignments	Task completion	Able to add filtering and pagination features to applications that have been made in the previous meeting	1.5%
16	After studying Islam in this subject, students will be able to mention Islamic values in development properly	 Internal Work Ethic, Islam Work Motivation in Islam Property and Wealth Functions Actualization of Jihad in Development Islamic economics Islamic Politics 	Lectures and discussions	3 X 45"	Exercises and assignments	Task completion	UTS	20%





17	After studying Islamic religion on this subject, students will be able to explain the mechanism of the process of forming and fostering a Sakinah family properly		Inner Family Functions Islam Formation Process Sakinah Family (Marriage) Problems And Dynamics Islamic Society The Mosque As	Lectures and discussions	3 X 45″	Exercises and assignments	Task completion	Able to create applications that have login and logout processes and limit access to certain data.	1.5%
		-	The Mosque As The Center Of Civilization						
18	UAS	-	UAS	UAS	3 X 45"	UAS	UAS	UAS	1.5%







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(1) O O O O O O O O O O O O O O O O O O O	INFORMATIC	S ENGINEERING										
	STUDY PROGRAM : D 4 INFORMATICS ENGINEERING											
SEMESTER LEARNING PLAN (RPS)												
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION							
MATHEMATICS 1	RTI222002	Basic Informatics	2 credits/ 4 hours	2	February 25, 2022							
AUTHORIZATION	RPS Developer Lect	turer	MMK Coordinator	Ka PRODI								
	1. Drs. Rawan	syah, M.Pd.	Deasy Sandhya	Priest Fahru	[·] Rozi, ST., MT.							
	Deasy Sand	lhya Elya, S.Si., M.Si.	Elya, S.Si., M.Si.									
Learning Achievement (CP)	Learning Outcomes	s of Study Program Graduate	es (CPL-Prodi)									
				J								
	Learning Outcomes	s Graduates charged to cour										
		s Graduates charged to cours										
	Mastering the conc	epts of sets, relations, functi	ons, matrices (definitio	n, notation, op	erations, transpose, determinants, inverses of 2x2							
	and 3x3 matrices),	solving systems of linear equ	ations and solving non-	linear equatio	ns.							
Short Course Descriptions	Mathematics 2 is the	ne basic material for advance	d mathematics from M	athematics 1 v	which is expected to be able to support and facilitate							
	learning and learning	ng programming.										
Learning Materials / Subjects	Sets, Relations, Fun	ctions, Matrices (Definitions	, Notations, Operations	, Transposes, I	Determinants, Inverses of 2x2 and 3x3 matrices),							
	Solving Systems of	Linear Equations and Solving	Non-Linear Equations.									
References	Main :											
	Stroud, KA and Dex	ter J. , Engineering Mathema	tics, Palgrave Macmilla	n, 2013								
	Supporters:											




		Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.									
Instruct	tional Media	Softwar	re :	Hardware :							
Name o	of Lecturer	- 1. 2.	Drs. Rawansyah, M.Pc Deasy Sandhya Elya, S	Computer I. .Si., M.Si.							
Week	Planned Final Canabi	lity	Study material	Learning Forms	Estimate	Student	Assessment Criteria &	Assessment Indicator	Rating		
	(Sub-CP-MK)	,	(Learning materials)	and Methods	d time	Learning Experience	Forms		Weight (%)		
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)		
1	Students are able to understand the conce the type of set	pt of F	Definition of Sets, Presentation of Sets, Types of Sets	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment:	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	 Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies 	Able to work on exercises systematically related to the material presented.	2%		





			Assignments : Do practice questions related to Logic (3x50') Offline					
2	Students are able to understand the concept of the type of set	Set Operations (Incision, Union, Difference, Complement, Symmetrical Difference and Composition)	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%





3	Students are able to understand the concept of Relations	The definition of a relation, the relation symbol, defines the result area of the relation	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%
4	Students are able to understand the concept of function	function result area , relation and function differences	Form : Studying - Online (Online) (1x50') Asynchronous → learning video	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%





			 Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline 		related to the material.			
5	Quiz 1	- Material 1 to 4	Online written exam	6 x 50"	Answer questions correctly	- Answer accuracy	Quiz 1	7.5%
6	Students are able to understand the concept of the Matrix	Definition of Matrix, Matrix Notation, Same Matrix	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	 Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies 	Able to work on exercises systematically related to the material presented.	1.5%





			Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline					
7	Students are able to understand the concept of the Matrix	Matrix Addition and Subtraction, Matrix Multiplication, Matrix Transpose	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment:	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	 Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies 	Able to work on exercises systematically related to the material presented.	1.5%





			Assignments : Do practice questions related to Logic (3x50') <i>Offline</i>					
8	Students are able to understand the concept of the Matrix	determinant property, 2x2 matrix determinant, 2x2 matrix inverse	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%





9	UTS	- Material from meeting 1 to 8	Online written exam	6 x 50"	Answer Questions Correctly	- Answer accuracy	UTS	30%
10	Students are able to understand the concept of the Matrix	Determinant with cofactors for a 3x3 Matrix	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%
11	Students are able to understand the concept of the Matrix	inverse matrix 3x3	Form : Studying - Online (<i>Online</i>)	6 x 50"	By studying and understanding the existing material, students are expected to be	Criteria: Scoring criteria rubric Form of assessment: • Presentation	Able to work on exercises systematically related	1.5%





			(1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion		able to understand and work on questions related to the material.	•	Written test, about solving case studies	to the material presented.		
			Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline							
12	Students are able to understand the concept of solving systems of linear equations using the Gauss Seidel method	Gauss Seidel Method Algorithm	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Cri Sco Fo	iteria: oring criteria rubric rm of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%	-





			Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline					
13	Students are able to understand the concept of solving systems of linear equations using the Gaussian method	Gaussian Method Algorithm	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment:	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	 Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies 	Able to work on exercises systematically related to the material presented.	1.5%





14	Quiz	 Material from meeting 9 to 12 	Assignments : Do practice questions related to Logic (3x50') <i>Offline</i> Online written exam	6 x 50"	Answer	- Accuracy of explanation	Quiz	7.5%
					correctly	- Oral questions - Task		
15	Students are able to understand the concept of solving systems of linear equations using the Gauss- Jordan method	Gauss- Jordan Method Algorithm	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	 Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies 	Able to work on exercises systematically related to the material presented.	1.5%





			questions related to Logic (3x50') <i>Offline</i>					
16	Students are able to understand the concept of solving non-linear equations	Table and Bisection Methods	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (2x50') Sync → Vcon , discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignments : Do practice questions related to Logic (3x50') Offline	6 x 50"	By studying and understanding the existing material, students are expected to be able to understand and work on questions related to the material.	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work on exercises systematically related to the material presented.	1.5%
17	UAS	- Material from meeting 1 to 16	Online exams	6 x 50"	Able to do the questions well	- Answer accuracy	UAS	35%









3. English 2



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

		-							
SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION				
			(credits)/hour						
				_					
FNGLISH 2	RTI222003	Basic Informatics	2 credits/ 3 hours	2	19 February 2018				
	RPS Develor	or lecturer	MMK Coordinator						
ACTIONZATION	Atiach Num								
	Atigan Nuru	i Asri, S.Pa, M.Pa	Atiqan Nurui Asri,	Ir. Deddy Kusblanto	PA., WIWKOM.				
	Farida Ulfa,	S.Pd, M.Pd	S.Pd, M.Pd						
	Satrio Binus	a S., SS, M.Pd							
Learning Achievement (CP)	Learning Ou	ning Outcomes of Study Program Graduates (CPL-Prodi)							
				J					
	Special Skills:								
	1. Masterir	ng knowledge of oral and writter	n communication techn	iques using national a	nd international languages.				
	2 444								
	2. Able to c	communicate using internationa	l languages orally and li	n writing.					
	Learning Ou	teamore Graduates charged to a							
	Learning Ou	comes Graduates charged to c	ourses (CPL-IVIN)						
	1. Masterir	ig knowledge of spoken and wri	tten communication te	chniques using English	in the context of Informatics Engineering.				
	2. Able to c	communicate using English orally	v and in writing in the c	ontext of Informatics	Engineering .				
Short Course Descriptions	The name of	this course is Informatics Englis	sh 2 taught to students	of the Informatics Eng	ineering Study Program which is focused on				
Short course Descriptions	training their abilities and chills in Lictoring. Speaking, Beading, and Writing in an integrated manner in the context of Informatics								
	Engineering. So the tenics in this material adapted to the context of the field of informatics that can be applied in everyday life and in the								
	Engineering	. So the topics in this material a	adapted to the context	of the field of informa	tics that can be applied in everyday life and in the				
	world of wo	rk in the future. The methods us	sed during the teaching	and learning process i	nclude lectures, discussions, role plays ,				
	presentations, debates, and individual and group projects.								





Learning Materials / Subjects	1. Topic 1 : Programming
	1.1. Stages in Programming
	1.2. Flowcharting
	1.3. ProgrammingLanguage
	1.4. Grammar Study: Describing objects and their functions, Describing Process, and Reporting Screen Messages.
	2. Topic 2: Databases
	2.1 Database Basics
	2.2 Grammar Study: Expressing Certainty, Using If-Clause
	2.3 Data Processing
	2.4 Data Storage and Backup
	3. Topic 3: Computer Security
	3.1 Computer Threats
	3.2 Grammar Study: Simple Past Tense
	3.3 Computer Crime
	3.4 Grammar Study: Analyzing Problems and Their Solutions, and Writing Short Reports
	4. Topic 4: Electronic Publishing
	4.1 Electronic Publishing
	4.2 Grammar Study: Expressing Agreement/Disagreement, The Infinitives
	5. Topic 5: E-Commerce
	5.1 E-commerce Types
	5.2 E-commerce Features





	5.3 Grammar Study: A	5.3 Grammar Study: Adverbs of Quantities, Linking Words (and, so, or, but)							
	5.4 Online Transactions								
	5.5 Transaction Securit								
	5.5 mansaction Securit								
	6. Topic 6: Recent Develop	ments on Information Technology							
	6.1 Current Changes in	Interactions							
	6.2 Recent Development	nts in Computing							
	6.3 Grammar Study: Fu	ture Tense, Making a Summary of an Article							
References	Main :								
	Asri, Atiqah Nurul. 2018. E	sri, Atiqah Nurul. 2018. English for Informatics 2 : Fourth Edition. The module has not been published yet.							
	Supporters:								
	1. Esteras, Santiago Re	macha. (2010). Infotech English for Computer Users Workbook . Cambridge: Cambridge University Press.							
	2. Esteras, Santiago Re	macha. (2011). Infotech English for Computer Users Student's Book. Cambridge: Cambridge University Press.							
	3. Glendinning, Eric H	and McEwan, John. (2012). Basic English for Computing Revised and Updated . Oxford: Oxford University Press.							
	4. Hills, David. (2012).	English for Information Technology Vocational English Course Book 2 . Essex:							
	Pearson Education I	imited.							
	5. Olejniczak, Maja. (2	011). English for Information Technology 1 Vocational English Course Book . Essex: Pearson Education Limited.							
Instructional Media	Software :	Hardware :							
		Computers, LCD Projectors, Audio and Video Files, and Speakers							
Name of Lecturer	1. Atiqah Nurul Asri, S.Pd	, M.Pd							
	2. Farida Ulfa, S.Pd, M.Pd								
	3. Satrio Binusa S., SS, M.	Pd							
Requirements Course									





Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1-3	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>Programming</i>. 	 Topic 1 : Programming Stages in Programming Flowcharting ProgrammingLangua ge. Grammar Study : Describing objects and their functions, Describing Process, and Reporting Screen Messages. 	Forms of Learning: Lectures & Assignments/Tutori als Learning methods: Lecture group discussion Case study Presentation	9 x 45 minutes	 By using English students can: identify and sequence the steps in programming. read and understand snippets of online magazine articles about an interview about the steps for making a program. identify implied and explicit information in the reading above by answering the questions reading above. Complete the sentences with the words provided by referring to the information in the text above. identify, mention, and explain the symbols used in <i>flowcharts</i> and their functions. read, understand, and re-explain the contents of the reading about <i>the Flowchart</i>. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: presentations and case studies • writing test	 Accuracy and mastery of student communication using English in: identify and sequence the steps in programming. read and understand snippets of online magazine articles about an interview about the steps for making a program. identify implied and explicit information in the reading above by answering the questions reading above. Complete the sentences with the words provided by referring to the information in the text above. identify, mention, and explain the symbols used in <i>flowcharts</i> and their functions. read, understand, and re-explain the contents of the reading about <i>the Flowchart</i>. identify the main idea of the reading. 	10%





		 identify the main idea 	of	-	identify true or false	
		the reading.			sentences based on the	
		 identify true or false 			information in the text.	
		sentences based on t	ne	•	identify implicit and	
		information in the text			explicit information in	
		 identify implicit and 			the text.	
		explicit information in		-	complete a flowchart	
		the text			about a person's	
		complete a flowchart			activities based on the	
		- complete a nowchart			information in a	
		about a person's			paragraph.	
		information in a		-	make a flowchart	
		mormation in a			according to the given	
		paragraph.			situation, write down the	
		make a flowchart			explanation, and	
		according to the given			present it in front of the	
		situation, write down		_	Class. identify or find words	
		the explanation, and		-	related to programming	
		present it in front of th	e		contained in the	
		class.			alnhahet	
		 identify or find words 		-	read understand	
		related to programmin	g		mention and explain	
		contained in the			programming languages	
		alphabet.			in reading Computing	
		 read, understand, 			Languages.	
		mention, and explain		-	know, understand, and	
		programming languag	es		use the	
		in reading Computing			words/phrases/sentence	
		Languages .			s used in: describing	
		know, understand, and	Ł		objects and their	
		use the			functions, describing a	
		words/phrases/senter	с		process, and reporting	
		es used in: describing			back screen messages .	
		objects and their				
		functions describing a				
		process and reporting				
		hack screen message	·			
		buok soleen messaye	0.	I		





4-6	 Mast 	2. Topic 2 : Databases	Forms of	6 x 45	By using English students	Criteria:	Accuracy and mastery of	10%
	ering and applying	2.1. Database Basics	Learning:	minutes	can:	Accuracy and mastery of	student communication	
	oral and written	2.2. Grammar Study:	Lectures &		 database terms 	communicating in English	using English in:	
	communication	Expressing	Assignments/Tutori		Montion the fields and	0 0	database terms .	
	techniques using	Certainty, U sing If-	als		 Mention the news and records contained in a 	Form of assessment:	 Mention the fields and 	
	English in the	Clause			detebase asserding to	Oral test:	records contained in a	
	context of	2.3. Data Processing	Learning methods:			presentations and	database according to	
	Informatics	2.4. Data Storage and	 Lecture 		the case given.	case studies	the case given	
	Engineering with	Backup	 group discussion 		• read, understand, and	 writing test 	 read understand and 	
	the topic Database.		 Case study 		look up data in a table.		look un data in a table	
			 Presentation 		• read, understand, and		 road understand and 	
					retell Search content .		read, understand, and rotall Soarch contant	
					• determine the selection			
					rules to search for a		 Identity, describe, and exemplify wildcord 	
					data in the database		exemplity wildcard	
					according to the case			
					given.		• Know, understand, and	
					 identify, describe, and 		use the	
					exemplify wildcard		words/phrases/sentence	
					characters .		s used in: expressing	
					 know, understand, and 		possibilities.	
					use the		 know, understand, and 	
					words/phrases/sentenc		use the if clause in a	
					es used in: expressing		sentence.	
					possibilities.		 identify, mention, and 	
					 know, understand, and 		explain the steps in data	
					use the if clause in a		processing based on	
					sentence.		the audio file heard.	
					 identify, mention, and 		 identify, enumerate, and 	
					explain the steps in		describe data storage	
					data processing based		and back up .	
					on the audio file heard.		complete the contents	
					 identify, enumerate, 		of the reading Data	
					and describe data		Storage with the words	
					storage and back up .		provided.	
					complete the contents		hear and understand	
					of the reading Data		conversations about	





					 Storage with the words provided. hear and understand conversations about Data Storage and identify true or false sentences. 		Data Storage and identify true or false sentences.	(
7-8	• Mast ering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic Computer Security.	 3. lopic 3 : Computer Security 3.1. Computer Threats 3.2. Grammar Study : Simple Past Tense. 3.3. Computer Crime s 3.4. Grammar Study : Analyzing Problems and Their Solutions, and Writing Short Reports 	Forms of Learning: Lectures & Assignments/Tutori als Learning methods: Lecture group discussion Case study Presentation	6 x 45 minutes	 By using English students can: mention and explain the kinds of <i>computer threats</i>, solutions, and prevention. identify the words in the box and match them with descriptions of <i>computer threats</i>. identify and match phrases about solutions to face <i>computer threats</i> and their goals. hear and understand conversations about <i>computer threats</i> and answer questions. know, understand, and use <i>Simple Past Tense</i> in sentences. asking students to retell their experiences related to <i>computer threats</i> and the solutions carried out using <i>the Simple Past Tense</i>. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: presentations and case studies • writing test	 Accuracy and mastery of student communication using English in: mention and explain the kinds of <i>computer threats</i>, solutions, and prevention. identify the words in the box and match them with descriptions of <i>computer threats</i>. identify and match phrases about solutions to face <i>computer threats</i> and their goals. hear and understand conversations about <i>computer threats</i> and answer questions. know, understand, and use <i>Simple Past Tense</i> in sentences. recounted his experiences related to <i>computer threats</i> and the solutions carried out using <i>the Simple Past Tense</i>. 	10%





					 identify, mention, and explain the various types of computer crime. read, understand, and retell the contents of news snippets about computer crime and answer questions. watch and understand the contents of the Hackers Outlaws and Angels video and identify and mention the types of hackers and their differences by filling in the table provided. search for a news article about computer crime in Indonesia, identify some of the points given, analyze it, write a summary, and present it in front of the class 		 identify, mention, and explain the various types of computer crime . read, understand, and retell the contents of news snippets about computer crime and answer questions. watch and understand the contents of the Hackers Outlaws and Angels video and identify and mention the types of hackers and their differences by filling in the table provided. search for a news article about computer crime in Indonesia, identify some of the points given, analyze it, write a summary, and present it in front of the class. 	
9	Midterm exam	1		L	1	1		20%
10-11	- Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with	4. Topic 4: Electronic Publishing 4.1 Electronic Publishing 4.2 Grammar Study: Expressing Agreement/Disagre ement, The Infinitives	Forms of Learning: Lectures & Assignments/Tutori als Learning methods: • Lecture • group discussion	6 x 45 minutes	 By using English students can: State and explain the meaning of <i>electronic publishing</i>. mention and explain the things that are considered in making <i>electronic publishing</i>. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: presentations and case studies • writing test	 Accuracy and mastery of student communication using English in: State and explain the meaning of <i>electronic publishing</i>. mention and explain the things that are 	10%





the tends of			
the topic of	Case study	distinguish and explain	considered in making
Electronic	Presentation	electronic publishing	electronic publishing .
Publishing.		and paper based	 distinguish and explain
		publishing and	electronic publishing
		determine which one is	and paper based
		more effective for	<i>publishing</i> and
		electronic publication in	determine which one is
		a given case.	more effective for
		 read, understand, and 	electronic publication in
		identify the opinions of	a given case.
		several people	 read, understand, and
		regarding electronic	identify the opinions of
		publishing in the	several people
		reading by completing	regarding <i>electronic</i>
		the table provided.	publishing in the reading
		 expressed his opinion 	by completing the table
		regarding electronic	provided.
		publishing and paper	expressed his opinion
		based publishing	regarding electronic
		 mention and explain 	publishing and paper
		the features of an	based publishing
		electronic book reader	mention and explain the
		mention explain and	features of an electronic
		analyze the differences	book reader
		between the two	mention explain and
		electronic book readers	analyze the differences
			between the two
		• designing an electronic	electronic book readers
		book reader and	designing an electronic
		presenting it in front of	book reader and
		the class	presenting it in front of
		read understand and	the class
		identify the opinions of	 know understand and
		several neonle	
			worde/nhrases/cantance
		in the reading by	
		in the reading by	3 useu ili expressing





					 completing the table provided. expressed his opinion regarding <i>e-publishing</i> and <i>paper based publishing</i>. know, understand, and use the words/phrases/sentenc es used in expressing opinions (agree or disagree) in a given case. know, understand, and use <i>Infinitives</i>. 		opinions (agree or disagree) in a given case. • know, understand, and use <i>Infinitives</i> .	
12-14	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>E</i>- commerce 	 5. Topic 5: E-Commerce 5.1 E-commerce Types 5.2 E-commerce Features 5.3 Grammar Study: Adverbs of Quantities, Linking Words (and, so, or, but) 5.4 Online Transactions 5.5 Transaction Security 	Forms of Learning: Lectures & Assignments/Tutori als Learning methods: Lecture group discussion Case study Presentation	6 x 45 minutes	 By using English students can: mention and explain the meaning of <i>e</i>-commerce and online shopping and their differences. share experiences related to online shopping. listen, understand the contents of a conversation about online shopping, and identify true or false sentences. mention, sort, and explain how to purchase online shopping based on the cases given. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: presentations and case studies • writing test	 Accuracy and mastery of student communication using English in: mention and explain the meaning of <i>e-commerce</i> and <i>online shopping</i> and their differences. share experiences related to <i>online</i> shopping. listen, understand the contents of a conversation about <i>online shopping</i>, and identify true or false sentences. mention, sort, and explain how to purchase <i>online shopping</i> based on the cases given. 	5%





	 identify, mention, and 	 identify, mention, and
	explain the types of	explain the types of e-
	business by completing	commerce by
	the tables provided	completing the tables
	 listen understand and 	provided
		 liston understand and
	words provided while	the words provided
		while listening to the
	file.	audio file.
	 read, understand, and 	 read, understand, and
	re-explain Internet	re-explain Internet
	Shopping: the Inside	Shopping: the Inside
	Story passage and	Story passage and
	answer questions.	answer questions.
	 State and explain the 	 State and explain the
	criteria for a good e-	criteria for a good e-
	commerce/online shop	commerce/online shop
	website.	website.
	mention and explain	 mention and explain the
	the features that must	features that must exist
	exist on an e-	on an e-
	commerce/online shop	commerce/online shop
	website	website
	• analyze an e-	• analyze an e-
	commerce/online shop	commerce/online shop
	website and present it	website and present it in
	in front of the class	front of the class
	a understand and make	a understand and make
	sentences using	semences using
	auveros or quaritity .	adverbs of quantity .
	understand and	understand and
	combine sentences by	combine sentences by
	using the linking words	using the linking words
	and, but, or, and so .	and, but, or, and so .





					 read, understand, and explain an email about online security and answer the questions. 		 read, understand, and explain an email about online security and answer the questions. 	
15-17	 Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic Recent Development in IT. 	 b. Topic of Recent Developments on Information Technology 6.1 Current Changes in Interactions 6.2 Recent Developments in Computing 6.3 Grammar Study: Future Tense, Making a Summary of an Article 	Learning: Lectures & Assignments/Tutori als Learning methods: • Lecture • group discussion • Case study • Presentation	minutes	 by using English students can: mention and explain the difference between the way of communication now and in the past. mention and explain the online communication applications that are often used and the reasons. identify, name, and exemplify, and differentiate <i>enterprise social media websites</i>. listen, understand an explanation about <i>the enterprise social media website</i> and complete the table provided. read, understand, and re-explain the 3 readings of <i>Smart cards, Robotics</i>, and <i>Virtual Reality</i> and complete the table given. understand and use <i>the Future Tense</i> in sentences. 	 Accuracy and mastery of communicating in English Form of assessment: Oral test: presentations and case studies writing test 	 Accuracy and mastery of student communication using English in: mention and explain the difference between the way of communication now and in the past. mention and explain the online communication applications that are often used and the reasons. identify, name, and exemplify, and differentiate <i>enterprise</i> social media websites . listen, understand an explanation about the <i>enterprise</i> social media website and complete the table provided. read, understand, and re-explain the 3 readings of <i>Smart</i> cards, Robotics , and Virtual Reality and complete the table given. understand and use the Future Tense in sentences. 	





					 understand and make a summary of a journal article and present it in front of the class. 		• understand and make a summary of a journal article and present it in front of the class.	
18	Final exams							25%
19	Remedy							

4. Operating system

Survey of the second se	MALANG S INFORMATIO STUDY PROG	TATE POLYTECI n technology dep ram : d4 business i	HNIC ARTMENT NFORMATION S	YSTEM						
	SEMESTER LEARNING PLAN (RPS)									
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION					
Operating system	RTI222004	Informatics Engineering	2 credits/ 6 hours	1						
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	or Ka PRODI						
	Annisa Taufika Fird Meyti Eka Apriyani	lausi, ST., MT. i, ST., MT.		Hendra Prad	ipta, SE., M.Cs.					
Learning Achievement (CP)	Learning Outcomes	s of Study Program Graduate	s (CPL-Prodi)							
	S3 - Contribute to in S9 - shows a respor P7 - supervision and P8 - Able to carry o	mproving the quality of life in nsible attitude towards work i d evaluation of the completio ut the process of self-evaluati	society, nation, state, n the field of expertise n of work assigned to v on of work groups und	and the advan independentl workers under der his respons	cement of civilization based on Pancasila y; their responsibility ibility, and able to manage learning independently					





	KU - Mastering theoretical concepts in the field of Business Information Systems knowledge in general and theoretical concepts in the field of Multiplatform System Development or E-Business in depth, and able to formulate procedural problem solving
	Learning Outcomes Graduates charged to courses (CPL-MK)
	Able to explain the basic concepts of operating systems
	Able to operate commands on the Linux operating system
	Able to make input/output processes on Linux
	Able to make file operations
	Able to understand process and process management
	Able to operate file programming
	Able to understand about the flow of memory
Short Course Descriptions	In the Operating Systems course, we will discuss the Basic Concepts of Operating Systems, Processes, Scheduling, Synchronization, Memory and Secondary Storage in the Linux operating system.
Learning Materials / Subjects	Basic Concepts of Operating Systems, Processes, Scheduling, Synchronization, Memory, I/O
	LEARNING METHODS:
	1. Lectures / Expert Lectures,
	2. Problem Based Learning/FGD
	3. Project Based Learning
	4. Self-Learning (V-Class)
	5. Group discussion
	6. Case method
References	Main :
	1. MDGR, Introduction to Computer Operating Systems, 2006





		Supporters:						
Instruct Name o Require M in g gu Ke	ional Media f Lecturer ments Course Planned Final Capability (Sub- CP-MK)	Software : SOFTWARE : OS – WI Linux , Web Browser (Notepad++) - Study material (Learning materials)	Hardware : /INDOWS & r , text editor Personal Computer, Internet Connection Learning Forms and Methods Estimated time Student Learning Experience (4) (5) (6) (7) (8)					Rating Weight (%)
(1) <i>I</i>	(2) Students know the basic concepts of operating systems	 (3) Operating System Components Alternative Viewpoints Operating System Structure Java Virtual Machine GNU/Linux systems 	(4) Form : Lectures , practicum Learning methods: Problem Base Learning (PBJ) group discussion Learning Resources: E-learning Ims.polinema.a id	 (5) 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments ac. 	(6) By studying the basic material students can understand the basic concepts of operating systems	 (7) Criteria : Scoring criteria rubric Form of assessment: Practicum Report An assessment case study of OS specificatio ns that will be used in accordance with the SO structure 	 (8) Able to install VMWare on SO Able to install Linux operating system 	(9)





2	Students are able to operate basic Linux commands	Linux operating system basic commands	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning at Ims.polinema.ac. id	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments	By studying basic programming material students can understand Processes and Threads in operating systems	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	•	Ability to explain the concept of Process Ability to explain the concept of a thread	2.3%
3	Students are able to make input output operations on Linux	Input-output operations	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments	By studying the basic material of programming students can understand Scheduling on the LInux operating system	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	•	Ability to explain the Concept of Scheduling Ability to explain Scheduling Algorithms	2.3%





4	Students are able to make file operations and Linux directory structures	File operations and directory structure	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments 	By studying the basic material of programming students can understand processes and synchronization	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	 Ability to explain the concept of interaction Ability to explain synchronization Ability to describe sync devices 1 	2.3%
5	Quiz 1		Quiz 1	Quiz 1	Quiz 1	Quiz 1	Quiz 1	10%
6	Students are able to understand processes and process management on Linux	Process and process management	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments 	the basic material of programming students can further understand the process and synchronization	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	 Ability to explain the concept of synchronization 2 ability to explain deadlock processes Ability to explain Graph diagrams ability to explain Bounded Buffer ability to explain Readers/Writers ability to explain Two Way Sync 	2.3%
7	Students are able to work with the Bash shell	Works with bash shells	Form : Lectures , practicum	- 2 x 50" Face to Face (Offline)	By studying basic programming material students can understand the	Criteria : Scoring criteria rubric	 Ability to explain memory management Ability to explain memory allocation 	2.3%





			Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning lms.polinema.ac. id	- 4 x 50" Practicum Jobsheet, Structured Assignments	memory process on the Linux operating system	 Form of assessment: Practicum Report Valuation case study about 	• ability to explain segmentation	
8	Students are able to operate shell programming	Shell programming	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning lms.polinema.ac. id	 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments 	By studying basic programming material, students can understand advanced memory processes on the Linux operating system	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	 ability to explain the concept of virtual memory ability to explain the concept of process page requests ability to explain the concept of frame allocation strategy ability to explain the concept of linux memory 	2.3%
9	UTS	UTS	Form : Evaluation Learning methods: Problem Base Learning (PBL) Learning Resources:	UTS	UTS	UTS	UTS	25%





10	Students can understand about Unix system calls and memory management	Unix System calls and memory management	E-learning lms.polinema.ac. id Form : Lectures , practicum Learning methods: Problem Based	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured	By studying the basic material of programming students can understand about secondary storage	Criteria : Scoring criteria rubric Form of assessment: • Practicum	•	Ability to understand the file system on Linux Ability to understand the directory structure on linux Ability to understand network and security	2.3%	
			Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id		Assignments		 Report Valuation case study about 	•	aspects Ability to understand the implementation of the file system Ability to understand FHS Ability to understand file system block allocation		
11	Students can make file settings on Linux	file system	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments	By studying basic programming material students can understand the input and output processes of the operating system	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	•	Ability to describe hardware I/O Ability to describe the I/O subsystem Ability to explain disk management 1	2.3%	





12	Students can make hardware settings on Linux	Hardware management	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments	By studying the basic material of programming students can understand the advanced input and output processes of the operating system	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	 Ability to explain disk management 2 ability to describe tertiary storage ability to explain linux I/O 	2.3%
13	 Students can run: Linux boot process Add, modify, and delete users and groups Application management 	 Linux Boot Process User and group management Application management 	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments	 After studying the material in this chapter students are expected to be able to: Know the initialization of the boot process Make changes to the initialization of the boot process 	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	 Mastery of linux init process Can find linux run level GUI console mastery Mastery of system shutdown and rebooting 	2.3%
14	Students are able to provide progress on major course assignments	Linux-based operating system remastering	Form : Lectures , practicum Learning methods:	-	2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet,	By studying the basic material of programming students can understand about on time and multimedia	Criteria : Scoring criteria rubric Form of assessment:	Capable of recreating Linux from an existing Linux for personal distribution	5%





			Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac. id	Structured Assignments		 Practicum Report Valuation case study about 		
15	Students are able to provide progress on major course assignments	Linux-based operating system remastering	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac .id	 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments 	By studying basic programming material, students can understand distributed systems and system security	Criteria : Scoring criteria rubric Form of assessment: • Practicum Report • Valuation case study about	Capable of recreating Linux from an existing Linux for personal distribution	5%
16	Students are able to provide progress on major course assignments	Linux-based operating system remastering	Form : Lectures , practicum Learning methods: Problem Based Learning (PBL) group discussion Learning Resources:	 2 x 50" Face to Face (Offline) 4 x 50" Practicum Jobsheet, Structured Assignments 	Great task presentation	Great task progress	Capable of recreating Linux from an existing Linux for personal distribution	5%





			E-learning lms.polinema.ac. id					
17	UAS	UAS	Form : UAS	2 x 50" Face to Face (Offline)	UAS	UAS	UAS	25%





5. Software engineering

LISUNIK NEGERI 497 P	MALANG S INFORMATIO STUDY PROGI	TATE POLYTECHN N TECHNOLOGY DEPAR' RAM : D 4 INFORMATICS	IC fment s engineering		
		SEMESTER LEARN	ING PLAN (F	RPS)	
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION
Software engineering	RTI222005	Information Systems	2 credits/4 hours	3	
AUTHORIZATION	Vipkas Al Hadid Firc	laus ST., MT	Ekojono, ST., M.Kom.	Ir. Deddy Kusbia	into Purwoko Aji, Mmkom
Learning Achievement (CP)	Learning Outcomes Able to apply the di Learning Outcomes Mastering the c Understanding Able to apply SI Understand obj Able to perform Able to perform	of Study Program Graduates (Clascipline of software engineering magnetic formation of software charged to courses (Clasconcept of Introduction to RPL of software processes (SDLC) DLC (Software Development Life Clasconcept design a software requirements analysis, a basic software testing and maint	PL-Prodi) nethodology in making PL-MK) ycle) in software devel design and model the s	software applicat opment	tions
Short Course Descriptions	Describes the devel	opment of software engineering a	long with the design m	nethodology that	has developed to date.





Learning	Materials / Subjects	Introc Interf	luction to RPL, Software ace Design, Rapid Softw	e Process (SD vare Developi	LC), Softwa ment, Basis	re Requirer for Testing	nents, System Modelir , Software Maintenand	ng, Introduction ce Concepts.	to Object Oriented Desi	gn,
References Main : 1. Ian Sommerville, Software Engineering, 6th edition , Addison-Wesley Pub Co., 2000. 2. William R. King , 2015, Planning for Information Systems, Routledge. 3. Harlan D. Mills, Richard C. Linger, Alan R. Hevner, Principles of Information Systems Analysis and Design , Academic Press, 1990. 4. Sprague, RH and McNurlin, BC, Information Systems Management in Practice, 5th edition, Prentice-Hall, 2002. 5. Ward, J et al., Strategic Planning for Information Systems Practice, 2nd edition , Wiley, 1996 Supporters: Instructional Media									, 1990.	
Instructio	nal Media	Softw OS - desig	rare : WINDOWS, Star UM ner, Balsamiq mocku	L, Power p	LCDs and	e : Projectors				
Name of	Lecturer									
Requirem M in g gu Ke	eents Course Planned Final Capabi (Sub- CP-MK)	Study material (Learning material	s) F	Learning orms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)	
(1)	(1) (2) (3)				(4)	(5)	(6)	(7)	(8)	(9)
1	 Students can explain the properties of software as a product that is different from the fabrication process students can explain the 		 Software as a prod Nature of Software Software developm 	luct • I • I nent	Lecture , Discussio n	1x4x50'	 Listen to lecture material Discuss with group mates to understand the software concept 	 Accuracy in answering questions Activeness in class 	 Accuracy in explaining the characteristics of the software and being able to mention the types 	




2	 elements that make up the software Students can explain the critical nature of software development Students can explain SDLC (Software Development Life Cycle) and Understanding SDLC (Software Development Life Cycle) Students are able to explain the advantages 	 4. Common mistakes made by software developers and programmers SDLC Process Model Waterfalls Increment Process Model Increment Model RAD Model Evolutionary Process Models Prototyping 	 Lecture Self- directed learning discussion 	2x4x50'	 Listen to lecture material Discuss with group mates to understand the concept of SDLC 	 Accuracy in answering questions Activeness in class 	 of software applications Able to convey common mistakes made by programmers and developers in software development Be able to mention the function of the SDLC stages in software development correctly Be able to distinguish the advantages and disadvantages of 	
3	 explain the advantages and disadvantages of an SDLC methodology Students are able to 	 Prototyping Spiral Agile Extreme programming Development 	•		• Listen to lecture	- Accuracy in	Able to apply	
-	apply the SDLC methodology to software development	 process models Component based model 			 material Discuss with group mates to apply the SDLC methodology to 	answering questionsActiveness in class	SDLC stages according to group projects	





				group projects			
4	• Quiz 1	•	•	Answer quiz questions	 Accuracy in answering questions write 	 Accuracy in answering questions 	10
5	 Understand the concepts and principles of Software engineering 	 Requirements analysis and engineering (concepts & principles) 	•	 Listen to lecture material Discuss with group mates to understand the concept of software engineering 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with users with the right questions to get user needs Able to tell the integrity of the user in formal documents Able to describe user needs on WBS diagrams consisting of DATA, SERVICES, and REPORTS appropriately. 	
6	 Students understand the principles of designing SRS documentation 	 SRS software requirements specification (software requirement system) 	•	 Listen to lecture material Discuss with group members to apply in the form of SRS documentation 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with users with the right questions to get user needs Able to tell the integrity of the user in the SRS document 	





7	 Students understand and are able to design designs using DFD 	 Use cases UML diagrams Scenario narrative from the user WBS (Work Breakdown Structure) 	 Lecture Discussio n Presentat ion Task 	3x4x50'	 Listen to lecture material Discuss with group members to understand the concept of DFD 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with users with the right questions to get user needs Able to tell the integrity of the user in formal documents Able to describe user needs on WBS diagrams consisting of DATA, SERVICES, and REPORTS appropriately. 	
8	UTS	Meeting 1 - 9	Essay Exam	1x4x50'	 Answer questions / questions UTS 	 Accuracy in answering questions write 	 Able to answer correctly 	20
9 -11	 Students understand the concepts and principles of software design Understand object- based software design 	 Design concept UML Hierarchy of controls Use case diagrams Class diagrams 	 Lecture Discussio n Presentat ion Task 	3x4x50'	 Listen to lecture material Discuss with group mates to understand interface design concepts 	 Accuracy in answering questions Activeness in class 	Accuracy in understanding the stages in conducting software design	





12	Students are able to design software interface designs	 Design stages Data design Architectural design Interface design Software design documentation 	 Lecture Discussio n Presentat ion Task 	3x4x50'	 Listen to lecture material Discuss with group mates to understand the concept of software interface design 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with users with the right questions to get user needs Able to tell the integrity of the user in formal documents Able to describe user needs on WBS diagrams consisting of DATA, SERVICES, and REPORTS appropriately. 	
13	• Quiz 2	-	 Lecture Discussio n Presentat ion Task 	1x4x50'	Answer quiz questions	 Accuracy in answering questions Write 	 Accuracy in answering questions 	10
14	 Students understand the stages of software testing 	 Software Testing unit tests Integration system validation testing 	 Lecture Discussio n Presentat ion 	1x4x50'	 Listen to lecture material Discuss with group mates to understand software testing 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with users with the right questions to get user needs Able to tell the integrity of the 	





15	- Students understand	 system testing whitebox black box 	• Task	124250		Accuracy in	user in formal documents Able to describe user needs on WBS diagrams consisting of DATA, SERVICES, and REPORTS appropriately.	
10	 Students understand the stages of software maintenance and quality assurance 	 Software quality assurance SQA overview 	 Lecture Discussio n Presentat ion Task 	1X4X5U	 Listen to lecture material Discuss with group mates to understand the concept of software interface design 	 Accuracy in answering questions Activeness in class 	 Accuracy in understanding the stages of software maintenance and quality assurance 	
16		Project demonstration	 Presentat ion demonstr ation 	1x4x50'	 present project results systematically 	 Accuracy in answering questions project suitability 	 Accuracy in demonstrating the project Project equipment 	40
17	UAS	 From meeting 1 to 1 6 	Written/ Online Test	1x2x50'	 Answer UAS questions/questi ons 	 Accuracy in answering questions Write 	 Answer questions correctly 	30





6. Database



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION			
DATABASE	RTI222006	Core Courses	2 credits/ 4 hours	2	November 30, 2021			
AUTHORIZATION	RPS Develope	r Lecturer	MMK Coordinator	Ka PRODI				
	Dwi Puspitasar	ri, S.Kom., M.Kom.	Maybe Astiningrum, ST., M.Kom.	Imam Fahrur Rozi, ST, MT				
Learning Achievement (CP)	Learning Outco	omes of Study Program Gradu	ates (CPL-Prodi)					
	S8 Internalia	ze academic values, norms, an	d ethics .	-				
	S9 Demonst	trate a responsible attitude tov	wards work in the field of expertise independe	ntly .				
	PP1 Masterin	ig the concepts of applied mat	hematics, basic ICT knowledge (Algorithms, Pro	ogramming, Databases , com	puter networks,			
	etc.), engineering science, and engineering principles in the ICT field in depth.							
	PP2 Masterin	g method development of ICI	products to provide appropriate solutions ac	ross one or more application	domains.			
	KU2 Able to d	lemonstrate independent, qua	lity and measurable performance.					
	Learning Outco	omes Graduates charged to co	ourses (CPL-MK)					
	Mastering data	abase development concepts a	and methods as part of ICT product development	ent ; Able to properly design	relational databases;			
	Able to use SQL language to implement and manage databases; Able to demonstrate independent, quality and measurable performance by							
	taking into acc	ount academic values, norms	and ethics in designing and managing databas	es.				
	SUB-CPMK 1	Able to give examples of ICT p	products that use relational databases with cle	ar and reliable reference sou	rces [C2, A3] (1st			
		mg)						
	SUB-CPMK 2	Able to design databases usin	g ER Diagrams based on the requirements give	en (C4,A3,P2) (mg 2-3)				
	SUB-CPMK 3	Able to design a relational mo	odel using the ER Diagram mapping algorithm t	to the relational model [C4,A3	3,P2] (mg 5-6)			





		SUB-CPMK 4 Able to c	lesign a relational mo 21 (mg 7-8)	del using th	e database normalization meth	od based on the ta	bles and data provided		
		SUB-CPMK 5 Able to v	vrite SQL-DDL comma	nds to impl	ement database design results a	and manage datab	ases [C3,A3,P2] (10th mg))	
		SUB-CPMK 6 Able to v	vrite SQL-DML comm	ands to mai	nage data stored in database [C3	3,A3,P2](mg to 11)			
		SUB-CPMK 7 Able to v	vrite SQL-DQL comma	inds to disp	lay data stored in database (que	ery data) [C4,A3,P2] (mg 12-13)		
		SUB-CPMK 8 Able to v	vrite SELECT comman	ds to displa	y data stored in multi tables in o	database [C4,A3,P2	2] [C4,A3,P2] (mg 15-16)		
Short Co	ourse Descriptions	After attending this cou	er attending this course, students are expected to master the knowledge of how to properly design and create relational databases, as						
		well as master the data	as master the database language (SQL language) to build and manage databases.						
Learning	g Materials / Subjects	Database concept, relat	ional database, data r	nodeling, E	RD, relational model mapping, c	latabase normaliza	ition, database implemen	tation,	
		SQL language, managing	g and displaying data	using SQL la	nguage				
Referen	ces	Main :							
		1 Pusnitasari D a	nd Hani'ah M 2019	Fasy Ways	to Design a Relational Database	Press Polvema			
		2. Eathansyah 201	E Pasic Data Paso P	andung Info		, rress roryenna.			
		Z. Fathansyah, 2013, Dasic Data Base, Bahuung informatics.							
		Supporters:							
		3. Elmasry, R. and	S. Navathe, 2016, Fur	damentals	of Database Systems, 3nd edition	on, Addison Wesley	/.		
		4. Andrew J. Oppe	l, 2010, Databases De	mystified, I	AcGraw-Hill/Osborne.				
Instruct	ional Media	Software :	Hardware :						
		1. MySQL	Computer						
		2. XAMPP							
		3. PhpMyAdmin							
		4. Ms. office							
		5. Zoom							
Name o	f Lecturer								
Require	ments Course								
Week	Planned Final Capability	Study material	Learning Forms and	Estimated	Student Learning Experience	Assessment	Assessment Indicators	Rating	
	(SUD-CP-MK)	(Learning materials)	Methods	time		Griteria & Forms	(evaluation)	(%)	
								(,,,)	





(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Able to give examples of ICT products that use relational databases with clear and reliable reference sources [C2, A3]	 RPS and LECTURE CONTRACTS Basic Concept [1] p. 1-14 Definition of Data and Database Use of data and databases Database characteristics Database Type Example of implementing the database Relational Database [1] p. 15-28 Definition of Relational Database Components in relational databases 	Form : Studying FACE: online / offline Method : Class and group discussions, demonstration examples of database usage TASK 1: Looking for examples of applications or papers related to the implementation of relational databases, reviewing/describ ing examples and mentioning the components of the database contained in the examples	1 x 2 x 100" Face to Face and Structur ed assignm ents. 1 x 2 x 70" Self Duty.	 Able to explain the meaning of data and database Able to explain the use of data and databases Able to explain the characteristics and types of databases Able to exemplify the application of the database Able to explain the meaning of relational database Able to mention relational database components Able to find real examples of database implementation 	Rubric Reviews/descri ptions of application examples or papers/writings related to the implementatio n of relational databases	 Accuracy in searching for examples Accurate review/example description The exact mention of the database component in the example Accurate search for reference sources 	5%





2-3	Able to design databases using ER Diagrams based on the requirements given [C4,A3,P2]	 Data modeling [1] p. 29-36 Data modeling concept Types and data modeling architecture Database design using ER Diagram [1] p. 58-92 ER Versions and Components Diagram 	Form : Studying FACE: online / offline Method : Discussion, Case/Problem Base Learning (PBL) TASK-2: Case Study: designing a	2 x 2 x 100" Face to Face and Structur ed assignm ents. 2 x 2 x 70" Self Duty.	 Able to explain the concept, type and architecture of data modeling Able to explain the versions and components of the ER Diagram Able to identify data requirements Able to explain and implement the steps in database design using ER diagrams 	Rubric The results of the design are in the form of ER Diagrams	- The accuracy of using ER Diagram notations in solving cases	20 %
		 Data requirements Database design steps using ER Diagram Determination of Entity, attribute and relationship Determination of relationship cardinality Determination of participant relationship 	database using the ER diagram of the given requirements		- Be able to determine entity, attribute, relationship, cardinality and participant relationships in database design using ER diagrams			





4	Test 1	Test 1: Meeting materials 1-3	Theory exam (close book)		 Able to work on multiple choice written exam questions / essays Able to design databases using ER Diagrams correctly and with quality based on the requirements given Able to complete assigned tasks independently and honestly 	Answer key Rubric The results of the design are in the form of ER Diagrams	 Correct answer with answer key Accuracy in determining the components of the ER Diagram 	
5-6	Be able to design a relational model using the ER Diagram mapping algorithm to the relational model [C4,A3,P2]	ER Diagram Mapping Algorithm to the relational model [1] p. 93-105 - Mapping Entities - Attribute Mapping Relationships Assessment of the suitability of the relational model with the data requirements	Form : Studying FACE: online / offline Method : Discussion, Case/Problem Base Learning (PBL) TASK-3: Case study : Mapping ER Diagrams to the relational model of a given ERD and assessing the suitability of the resulting model	2 x 2 x 100" Face to Face and Structur ed assignm ents. 2 x 2 x 70" Self Duty.	 Be able to explain the ER Diagram mapping algorithm to the relational model Able to do ER Diagram mapping to a relational model based on the algorithm that has been given Able to carry out a simple assessment of the suitability of the resulting relational model with the data requirements 	Rubric ER Diagram mapping results to the relational model Rubric the relational model fit assessment	 Accuracy in determining the component mapping of the ER Diagram to the relational model The accuracy of the results of the relational model conformity assessment 	15%





relational model using the database normalization method based on the tables and data provided [C4,A3,P2]Normalization [1] p. 37-57Studying FACE: online / offline100" Face to Face and offlinemeaning, purpose, benefits, and stages of database normalization - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process tagesDatabase normalization resultsthe process of normalization - The accuracy of the normalization results- Database normalization stages- Database normalization stagesMethod : Discussion, Case/Problem Base Learning (PBL)00" Face to Face and and stages- Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided- The accuracy of the normalization resultsTASK-4: Case study : Database normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF)TASK-4: Case study : Database normalization table and dataDatabase normalization based on given table and dataImage: Discussion of normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF)Task-4: case study : Database normalization based on given table and dataImage: Discussion of normalization normalizationImage: Discussion of normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF)Task-4: case study : Database normalizationImage: Discussion of normalization normalizationImage: Discussion of normalizationImage: Discussion of normalizationImage: Discussion of 	
the database normalization method based on the tables and data provided [C4,A3,P2] 37-57 FACE: online / offline FACE: online / offline FACE: online / FACE: online / offline FACE: online / FACE: online / offline and stages of database normalization normalization - Purpose and benefits of normalization - Purpose and benefits of normalization Method : Database normalization stages Structur dassignm (PBL) FACE: online / FACE: online / Offline FACE: online / Face to Face and structur and stages of database normalization normalization - Database normalization stages - Database normalization process [1] p. 37-57 FACE: online / PL FACE: online / Face and stiges Face to Face and stiges - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided - The accuracy of the normalization results - Database normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF) - Formation of normal form 1 (1 NF) - Formation of normal form 2 (2) - Formation of normal form 2 (2) - Formation of normalization - Formation of normalication - Formation of normalization <td></td>	
normalization method based on the tables and data provided [C4,A3,P2]- Definition of normalizationofflineFace and Additionnormalization- The accuracy of the normalization- Purpose and benefits of normalization- Purpose and benefits of normalizationMethod : Discussion, Case/Problem Base Learning (PBL)Structur ed assignm ents. 2 x 2 x 70" Self- Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided- The accuracy of the normalization results- Database normalization stages- Database normalization stages- TASK-4: Case study : Database normalization based on given table and data- Normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF)- Formation of normalization process [2] p. 37-57 - Formation of normal form 2/2- The accuracy of the normalization process [2] p. 37-57 - Formation of normal form 2/2- Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided- Method : - Able to perform normal form formation process based on the tables and data provided- Method : - Normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF)- Definition of normalization process [2] p. 37-57 - Formation of normal form 2 (2)- Formation of - Formation of normalization process [2] p. 37-57 - Formation of normal form 2 (2)- Definition of - Formation of normalization - Formation of normalization- Definition of - Formation of <td></td>	
based on the tables and data provided [C4,A3,P2]normalizationMethod : Discussion, 	
and data provided [C4,A3,P2] - Purpose and benefits of normalization Method : Discussion, Case/Problem Base Learning (PBL) Structur ed assignm Base Learning (PBL) - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided - normalization results Database normalization stages TASK-4: Case study : Database normalization process [1] p. 37-57 - Formation of normal form 1 (1 NF) TASK-4: Database normalization based on given table and data Duty. - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided - Able to perform normal form formation 1 (1NF) to 5 (SNF) in the database normalization process based on the tables and data provided	
 Formation of normal form 3 (3 NF) or BCNF Formation of normal form 4 (4 NF) Formation of normal form 5 (5 NF) 	





9	Test 2	Test 2: Meeting materials 6-8	Theory exam (close book)		 Able to work on multiple choice written exam questions / essays Able to do ER Diagram mapping to a relational model based on the algorithm that has been given Able to normalize the database based on the tables and data provided Able to complete assigned tasks independently and honestly 	Answer key Rubric ER Diagram mapping results to relational mode. Rubric Database normalization results	 Correct answer with answer key Accuracy in determining the component mapping of the ER Diagram to the relational model The accuracy of the results of the relational model conformity assessment Accuracy of stages in the process of normalization The accuracy of the normalization results 	
10	Able to write SQL-DDL commands to implement database design results and manage databases [C3,A3,P2]	Stages of Implementing Database - Create a database - Create tables, attributes, primary keys, and foreign keys SQL language - Definition, purpose, benefits, and	Form : Studying FACE: online / offline Method : Discussion, Case/Problem Base Learning (PBL) TASK-5: Case study :	1 x 2 x 100" Face to Face and Structur ed assignm ents. 1 x 2 x 70" Self Duty.	 Able to explain the stages in implementing the database Able to explain the meaning, purpose, benefits and types of the SQL language Able to explain SQL-DDL language, uses and commands in SQL-DDL language Able to write SQL-DDL commands to implement 	Rubric SQL-DDL command	 Accuracy, completeness, and neatness of SQL-DDL commands to implement database design results The accuracy of SQL- DDL commands to modify, delete databases, tables and relations according to the given case study 	5%





		types of SQL language SQL-DDL language - Usage and commands in SQL-DDL - CREATE command - ALTER command - DROP command	Write SQL-DDL commands to implement the results of the given database design, change and delete databases, tables, attributes, and relations based on the given case studies		database designs and manage databases - Able to write SQL-DDL commands to manage database management (change and delete databases, tables, attributes and relations)			
11	Able to write SQL-DML commands to manage data stored in the database [C3,A3,P2]	Data Management in Database - Data addition - Data deletion - Data change SQL-DML language - Usage and commands in SQL-DML - INSERT command - DELETE command - UPDATE command - WHERE clause	Form : Studying FACE: online / offline Method : Discussion, Case/Problem Base Learning (PBL) TASK-6: Case study : Write SQL-DML commands to add, delete, and change data in the database provided based on the given case study	1 x 2 x 100" Face to Face and Structur ed assignm ents. 1 x 2 x 70" Self Duty.	 Able to explain the process of data management in the database Able to explain the uses, types, uses, and commands in the SQL-DML language Able to write SQL-DML commands to manage data (add, delete, and change data) stored in the database 	Rubric SQL-DML command	- The accuracy of SQL- DML commands to add, delete, and modify data in the database, according to the given case study	5%





12-13	Able to write SQL-DQL commands to display data stored in database (query data) [C4,A3,P2]	Data Queries - Data query process SQL-DQL language - Usage and commands in SQL-DQL	Form : Studying FACE: online / offline Method : Discussion, Case/Problem	2 x 2 x 100" Face to Face and Structur ed assignm	 Able to explain the process of querying data Able to explain the use and commands of SQL-DQL Able to write SQL-DQL commands to display data stored in the database 	Rubric SQL-DQL command	 The accuracy of the SQL-DQL command for displaying data stored in the database is according to the given case study 	15%
		 SELECT command WHERE clause ORDER BY clause GROUP BY clause Aggregation Functions (SUM, MIN, MAX, AVG) HAVING calluses 	Base Learning (PBL) TASK-7: Case study : Write SQL-DQL commands to display data in the database provided based on the given case study	ents. 2 x 2 x 70" Self Duty.	(query data)			
14	Test 3	Test 3: Meeting materials 10-13	Close book theory exam		 Able to work on multiple choice written exam questions / essays related to database implementation and data management in databases using SQL DDL, DML, and DQL languages Able to complete assigned tasks independently and honestly 	Answer key	- Correspondence of answers with the answer key	





15-16	Able to write SELECT commands to display data stored in multiple tables in database [C4,A3,P2]	SELECT command for multiple tables - The JOIN command and its types - INNER JOIN - OUTER JOINS - CROSS JOIN	Form : Studying FACE: online / offline Method : Discussion, Case/Problem Base Learning (PBL) TASK-8: Case study : Write a SELECT command to display data in multiple tables in the database	2 x 2 x 100" Face to Face and Structur ed assignm ents. 2 x 2 x 70" Self Duty.	 Be able to explain the SELECT command for multi tables and their types Able to write SELECT commands for multiple tables as needed 	Rubric SQL-SELECT command for multiple tables	 SQL-SELECT command conformity The accuracy of the SELECT command for displaying data in multiple tables in the database is according to the given case study 	15%
			the database provided based on the given case study					
17	UAS	Test 4: Meeting materials 1-16	Theory exam (close book)		 Able to work on multiple choice written exam questions / essays Able to complete 	Answer key	 Corresponde nce of answers with the answer 	
					assigned tasks independently and honestly		key	







MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

CUDIFOT	CODE		MERCHIT	CENARCTED	
SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEIVIESTER	DATE. PREPARATION
			(credits)/hour		
DATABASE PRACTICUM	RTI222007	Information Systems	3 credits/ 6 hours	2	February 3, 2021
AUTHORIZATION	RPS Developer Lec	turer	ММК	Ka PRODI	
			Coordinator		
	1. Dwi Puspita	sari, S.Kom., M.Kom.	Dwi Puspitasari,	Imam Fahrur F	Rozi, ST, MT
	2. Elok Nur Ha	mdana, ST, MT	S.Kom., M.Kom.		
	3. Muhammad	d Shulhan Khairy, S.Kom., M.Kom.			
	4. Dika Rizky Y	unianto, S.Kom, M.Kom			
	5. Annisa Pusp	oa Kirana, S. Kom, M. Kom.			
	6. Retno Dama	ayanti, S.Pd., MT.			
	7. Ika Kusuma	ning Putri, S.Kom., M.Kom			
	8. Noprianto,	S. Kom, M. Eng			
	9. Milyun Ni'm	na Shoumi, S. Kom, M. Kom			
	10. Candra Bell	a Vista, S. Kom., MT.			
Learning Achievement (CP)	Learning Outcome	s of Study Program Graduates (CPL-Pr	odi)		





	S8 Internalize academic values	s, norms, and ethics.								
	S9 Demonstrate a responsible	attitude towards work in the field of expertise independently.								
	PP2 Mastering ICT product deve	elopment methods to provide the right solutions through one or more application domains.								
	KK1 Able to apply applied math	ematics, computational knowledge (Algorithms, Programming and Databases), engineering science,								
	and engineering principles	in the fields of software development (desktop, web and mobile), computer networks and other ICT /								
	science and technology fiel	ds (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).								
	KU1 Able to apply logical, critica	I, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise								
	and in accordance with wor	rk competency standards in the field concerned.								
	KU2 Able to demonstrate indep	endent, quality and measurable performance.								
	Learning Outcomes Graduates cha	arged to courses (CPL-MK)								
	Understand DBMS Architecture, Data Normalization, MySQL SQL DDL, MySQL SQL DML, MySQL Query Select, MySQL Join, MySQL Sub									
	Query, MySQL Nested Query, SQL	y, MySQL Nested Query, SQL Server SQL DDL, SQL Server SQL DML, SQL Server Query Select, SQL Server Join, SQL Server Sorting,								
	Filtering, SQL Server Aggregate, (N	1od 4,5,6,9 Querying).								
Short Course Descriptions	This course provides an understan	ding and mastery of database concepts, relational data models, database implementation, use of								
	queries (SQL) for data search, data	a sorting, data filtering, data deletion, data updates, views, stored procedures, and functions.								
Learning Materials / Subjects	DBMS Architecture, Data Normaliz	zation, MySQL SQL DDL, MySQL SQL DML, MySQL Query Select, MySQL Join, MySQL Sub Query, MySQL								
	Nested Query, SQL Server SQL DD	L, SQL Server SQL DML, SQL Server Query Select, SQL Server Join, SQL Server Sorting, Filtering, SQL								
	Server Aggregate , (Mod 4,5,6,9 Q	uerying) .								
References	Main :									
	Elmasry, R. and S. Navathe, 2016,	Fundamentals of Database Systems, 3nd edition, Addison Wesley.								
	Course and anno									
	Supporters:									
	5. Andrew J. Oppel. 2010. Dr	stabases Demystified. McGraw-Hill/Osborne.								
	6. Fathansyah, 2015, Basic D	6. Fathansyah, 2015, Basic Data Base, Bandung Informatics.								
Instructional Media	Software :	Hardware :								
	6. MySQL	Computer								
	7. SQLServer									





Name o	f Lecturer	1. 2. 3. 4. 5. 6. 7. 8. 9. 10	Dwi Puspitasari, S.Kon Elok Nur Hamdana, ST Muhammad Shulhan I Dika Rizky Yunianto, S Annisa Puspa Kirana, S Retno Damayanti, S.Pe Ika Kusumaning Putri, Noprianto, S. Kom, M. Milyun Ni'ma Shoumi, Candra Bella Vista, S. I	n., M.Kom. ⁻ , MT Khairy, S.Kom., M.K .Kom, M.Kom S. Kom, M. Kom. d., MT. S.Kom., M.Kom Eng S. Kom, M. Kom Kom., MT.	om.				
Require Week	ments Course Planned Final Capabili (Sub-CP-MK)	ity	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Studer are able to explain concept of present data based on certa needs/problems (C Studer are able to explain apply data present functions on spreadsheet -based data sets (C3) 	nts the ain 2) nts and ation	 Prep are sample data <i>spreadsheets</i> Selec ting data by utilizing the available functions 	Form : a. Studying Online (Online) (1x50') Asynchronou $s \rightarrow$ Learning video. b. Studying Online (Online) (1x50') Sync \rightarrow Submission of material	4 X 50″	Exercises and assignments (Jobsheet 1 on Introduction to Database)	Completion of jobsheet tasks	Able to perform data selection by utilizing the available functions	3%





				online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')						
2	•	Students are able to design databases through the design stages (C3) • Students are able to apply the results of database design into ER diagrams manually (C3)	 Desi gning the database according to the design stages Crea te ER Diagrams 	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	Able to design a database and its ER- Diagram	3%	





			online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')						
3	• Students are able to explain and further apply ERD and its relationship to data modeling, ERD variations, and tools that can be used to make ERD	- Maki ng ER Diagrams with CASE Tools	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50')	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	Students are able to make ER diagrams using tools	3%	





			Sync → Submission of material online and online discussion						
			Learning methods: Contextual Teaching and Learning (CTL)						
			 Assignment: Practice questions on theory and discussion Practicum and practicum job sheet work (2x50') 						
4	• Students are able to explain the relational model database described by CDM and PDM (C2)	- Crea te CDM and PDM with Sybase power designer tools	Form : Studying Online (<i>Online</i>) (1x50') Asynchronou	4 X 50″	Exercises and assignments	Completion of jobsheet tasks	Students are able to make CDM and PDM a relational model database using tools	3%	-





	 s → Learning video Studying Online (Online) (1x50') Sync → Submission of material online and online discussion 			
	Learning methods: Contextual Teaching and Learning (CTL)			
	Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')			





5	•	Students are able to	- Desi	Form :	4 X 50″	Exercises and	Completion of	Able to design a	3%
		design databases	gning the	Studying Online		assignments	iobsheet tasks	database and its FR-	
		through the design	database	(<i>Online</i>) (1x50')		0	,	Diagram	
		stages (C3)	according to the	Asynchronous				Diagraffi	
		 Students 	design stages	\rightarrow Learning					
		are able to apply the	5 5	videos.					
		results of database	- Crea						
		design into ER diagrams	te ER Diagrams	Studying Online					
		manually (C3)		(<i>Online</i>) (1x50')					
		, , , ,		Sync \rightarrow					
				, Submission of					
				material					
				online and					
				online					
				discussion					
				Learning					
				methods:					
				Contextual					
				Teaching and					
				Learning (CTL)					
				Assignment:					
				- Practice					
				questions on					
				theory and					
				discussion					
				- Practicum					
				and					
				practicum <i>job</i>					
				sheet work					
				(2x50')					





6	• Students are able to explain further about ERD and its relationship to data modeling, ERD variations, and tools that can be used to make ERD (C2)	- Maki ng ER Diagrams with CASE Tools	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL)	4 X 50″	Exercises and assignments	Completion of jobsheet tasks	Students are able to make ER diagrams using tools	3%
			Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work					





			(2x50')					
7	 Students are able to explain the concept of normalizing relational schemas into the desired form (C2) Students are able to explain the characteristics of the stages of normalization 1NF to 3NF (C2) 	 Prep are sample data spreadsheets Perf orm normalization according to the stages of normalization 	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning videos. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment:	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	able to carry out the normalization process in accordance with the stages of normalization	4.5%
			 Practice questions on theory and 					
			discussion					
			and practicum job					
			sheet work					





			(2x50')					
8	• Students are able to explain the characteristics of the stages of normalization 4NF, 5NF and BCNF (C2)	- Perf orm normalization according to the stages of normalization	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning videos. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	 Able to carry out the normalization process in accordance with the stages of normalization 	4.5%
			Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum					





			and practicum job sheet work (2x50')					
9	UTS	UTS	UTS	4 X 50"	UTS	UTS	UTS	25%
10	 Students are able to explain the basics of MySQL (C2)	 Install mysql Create a database Language (DDL) Create, Alter, Drop commands 	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	 Able to run MySQL Able to create database using DDL commands 	3%
			Learning methods: Contextual					
			Teaching and Learning (CTL)					
			Assignment: - Practice					





			questions on theory and discussion - Practicum and practicum job sheet work (2x50')						
11	Students are able to explain and apply the use of DML commands in MySQL (C2) (C3)	Make use of the INSERT, UPDATE, DELETE SQL statement commands	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion	4 X 50″	Exercises and assignments	Completion of jobsheet tasks	Able to use DML commands on MySQL	3%	
			Learning methods: Contextual Teaching and Learning (CTL)						





		Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')					
12 Students are able to explai and apply the use of SQL SELECT statements with various clauses (C2) (C3)	n Make use of the SQL Select command	Form : c. Studying Online (Online) (1x50') Asynchronou s → Learning videos. d.Studying Online (Online) (1x50') Sync → Submission of material online and online discussion Learning methods:	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	Able to use the SELECT command in MySQL	3%





			Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')					
13	 Students are able to explain the connectedness of entities in the database Students explain the types of data retrieval operations in several entities (C2) Students are able to complete retrieval cases involving more than one entity (C3) 	- Crea te a database with more than 1 table - Mak e use of the Inner Join and Outer Join commands	Form : Studying Online (Online) (1x50') Asynchronous → Learning video. Studying Online (Online) (1x50') Sync → Submission of material online and online discussion Learning methods:	4 X 50"	Exercises and assignments	Completion of jobsheet tasks	 Able to create databases and tables Able to use the join command in MySQL 	3%





			Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')					
14	 Students are able to explain and apply the use of SQL SELECT statements with various clauses (C2) (C3) 	- Mak e use of the SQL Select command	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion	4 X 50"	Exercises and assignments	Practice questions and discussion	Able to use the SELECT command in MySQL	3%





				Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')						
15	•	Students are able to explain and implement entity connectedness in the database Students are able to explain and implement types of data retrieval operations across multiple entities (C2) (C3) retrieval cases involving more than one entity	 Crea te a database with more than 1 table Make use of the Inner Join and Outer Join commands 	Form : Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material	4 X 50"	Exercises and assignments	Practice questions and discussion	 Able to create databases and tables Able to use the join command in MySQL 	3%	





16	1145	1145	online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')	4 X 50"	1145		1145	30%	
10	UAS	UAS	UAS	4 X 50	UAS	UAS	UAS	30%	





Algorithms And Data Structures



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) /	SEMESTER	DATE. PREPARATION
			hour		
Algorithms and Data	RTI222008		2 credits/ 3 hours	2	
Structures					
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI	
	- Maybe Astiningru	m, ST., M. Kom.	Maybe	Deddy Kusbi	anto PA, Ir., M.Kom
	- Imam Fahrur Rozi	, ST., MT	Astiningrum, ST.,		
	- Mustika Mentari,	S.Kom., M.Kom	M.Kom.		
	- Vivin Ayu Lestari,	S.Pd., M.Kom.			
Learning Achievement (CP)	Learning Outcome	s of Study Program Graduat	es (CPL-Prodi)		
				_	
	Mastering applied	mathematics concepts, basic	ICT knowledge (Algorit	hms, Program	ming, Databases, Computer Networks, etc.),
	engineering science	e, and engineering principles	in the ICT field.		
	Learning Outcome	s Graduates charged to cour	ses (CPL-MK)		
	Mastering the cond	cept of Searching, Sorting, Qu	ieue, Stack, Linked List,	Tree, Graf, Bru	
Short Course Descriptions	The Algorithm and	Data Structure course is a co	urse that is expected to	o provide know	ledge and skills in making Algorithms and Data
	Structures which in	clude Bruteforce, Divide-Cor	nquer, Stack, Queue, Lin	nked List, Tree	and Graph as well as Sorting and Searching
	processes.				
Learning Materials / Subjects	1. search				
	2 sort				
	2. 3010				
	3. queue				





	4. stacks
	5. Linked List
	6. tree
	7. Graph
	8. Bruteforce
	9. Divide-Conquer
	10. DFS
	11. BFS
References	Main :
	1. Goodrich, Michael T. Tamassia, Roberto. 2014. Data Structures & Algorithms in Java 6th Edition. John Wiley & Sons, Inc.
	2. Nugroho, Adi. 2008. Algorithms and Data Structures in the Java Language. Andi-Yogyakarta.
	3. Hari ya nto, Bambang, 2007, Data Structure, Informatics Publisher-Bandung.
	4. Sjukani, M, 2014, Algorithms (Algorithms and Data Structures 1) with C, C++, and Java 9th Edition. Media Discourse Partners.
	5. Sjukani, M, 20 10, Data Structures (Algorithms and Data Structures 2) with C, C++ 4th Edition. Media Discourse Partners.
	6. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.
	Supporters: 1. NetBeans IDE Java Quick Start Tutorial (https://netbeans.org) 2. Java Tutorial with Netbeans (http://ilmuonline.net)
Instructional Media	Software : Hardware :





Name o	f Lecturer	1. 2. 3. - May - Imar - Mus - Vivir	OS – WINDOWS /MAC/Linux JDK Netbeans IDEs be Astiningrum, ST., M. n Fahrur Rozi, ST., MT tika Mentari, S.Kom., M	PC, Laptop, I Kom. .Kom om.	CD and Proj	ector			
Require	ments Course	- Basio	Programming			Of a dame to a sum '			Deting
M in g gu Ke	Planned Final Capabi (Sub-CP-MK)	llity	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students understa and recall about programming usin Java Netbeans Students understa the definition of cl Students understa the definition of of and 	and ng and lass and bjects	object	LectureDiscussion	3x45'	Exercise	Question and answer	 Understand explanation of classes and objects 	1 %
2	 Students understand recall about a in Java Students understand the stages of make an array of object 	and arrays and king is	 Arrays of Objects 	LectureDiscussion	3x45 _	Exercise	 Question and answer 	 Understand the stages of implementing an array of objects in Java Netbeans 	1 %




3	• Students understand the use of the bruteforce algorithm and the divide-conquer algorithm	 Bruteforce Divide-conquer 	LectureDiscussion	3x45 _	Exercise	Question and answer	 Understanding the stages of the bruteforce and divide- conquer algorithms 	1%
4	• Quiz 1_	• Quiz 1	 Multiple Choice/Ess ay Exams 	3x45 _	Exam	• Quiz1	 multiple choice exams / Essay quiz 1 starting from week 1-3 material 	10 %
5	 Students understand the algorithms of searching bubble sort, selection sort and insertion sort 	 Bubble Sort Selection Sort Insert Sort 	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the method of sorting bubble, selection and insertion	1%
6	 Students understand the stages of searching with sequential search and binary search algorithms 	 Sequential Search BinarySearch 	LectureDiscussion	3x45 _	Exercise	Question and answer	 Understand search with sequential and binary search algorithms 	1%
7	 Students understand the meaning of the stack algorithm Students understand the stages of the Stack algorithm 	• stacks	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the stack algorithm in the program	1%





8	UTS	• UTS	• Multiple Choice/Ess ay Exams	3x45 _	Exam	• UTS	 Ability to do multiple choice/Essay exams to create objects, arrays of objects, and understand bruteforce, divide-conquer, serting(bubble, selection, insertion), searching(sequ ential and binary) and stack algorithms 	30%	
9	• Students understand the stages of making a queue algorithm	• queue	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the stages of the queue algorithm	2 %	
10	 Students understand the concept of a linked list Students understand the stages of making linked lists to solve problems 	Linked List	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the Single Stage Inked List	2 %	
11	Students understand the concept of a double linked list	Double Linked List	Lecture Discussion	3x45 _	Exercise	Question and answer	Understand the stages of the Double Lined List	2 %	





12	 Students understand the concept of a tree in general Understand understanding the application of binary trees 	Trees (Binaries)	LectureDiscussion	3x45 _	Exercise	Question and answer	 Understand the process of making a Tree 	2 %
13	• Quiz 2	• Quiz 2	Multiple Choice/Ess ay Exams	3x45 _	Exam	• Quiz 2	 Ability to reimplement stack, single linked list, double linked list, and binary tree 	10 %
14	 Students understand the concept of Binary Search Tree Students understand the stages of implementing the Binary Search Tree 	 Tree(Binary Search Tree) 	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the concepts, limitations and algorithms of binary search trees	2 %
15	 Students understand the concept of graphs in general Students understand the stages of implementing Graph in general 	• Graph	LectureDiscussion	3x45 _	Exercise	Question and answer	 Understand graph concepts, limitations and algorithms 	2 %
16	 Students understand the concept of the bread first search algorithm 	 Breadth First Search Depth First Search 	LectureDiscussion	3x45 _	Exercise	Question and answer	Understand the concept of BFS and DFS	2 %





	 Students understand the concept of the depth first search algorithm Students understand the difference between BFS and DFS Students understand when to use BFS or DFS 							
17	• UAS	• UAS	 Multiple Choice/Ess ay Exams 	3x45 _	Exam	● Exam	 The ability of all material from week 1 to 16 	30%

Information :

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Practicum Algorithms and Data Structures

values, norms and ethics.

	MALANG STAT	E POLYTECHNIC								
LEHNIK NEGERIAN PL	INFORMATION	I TECHNOLOGY DEPARTMEN'	Т							
	STUDY PROGRAM: D4 INFORMATICS ENGINEERING									
		SEMES	TER LEARNING PLAN (RPS)							
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION					
Algorithm and Data Structure Practicum	RTI222009	Software Engineering	2 credits / 4 hours	2	November 24, 2021					
AUTHORIZATION	RPS Developer L	ecturer	MMK Coordinator	Ka PRODI	· ·					
	Maybe Astiningr	um, ST., M.Kom.	Maybe Astiningrum, ST.,	Imam Fahrur Rozi, S	Т., МТ.					
	Imam Fahrur Roz	zi, ST., MT	M.Kom.							
	Mustika Mentari, S.Kom., M.Kom									
	Mamluatul Hani'ah, S.Kom., M.Kom.									
	Rokhimatul Wakhidah, S.Pd., MT									
	Noprianto Skom	., MEng.								
Learning Achievement (CP)		nes of Study Program Graduate	s (CPI-Prodi)							
	Leaning Outcom		s (ci 2 i i cui)	J						
	S8 Internalize	e academic values, norms, and et	thics.							
	S9 Demonstra	ate a responsible attitude towar	ds work in the field of expertise	independently.						
	KK1 Able to ap	ply applied mathematics, compu	utational knowledge (Algorithm	s, Programming and D	atabases), engineering science, and engineering					
	principles	in the fields of software develop	ment (desktop, web and mobile	e), computer networks	s and other ICT / science and technology fields (vision					
	- graphics,	embedded , Information Systen	ns, Intelligent systems, Business	Intelligence, etc).						
	KU1 Able to ap	ply logical, critical, innovative, q	uality, and measurable thinking	in carrying out specifi	c work in their field of expertise and in accordance					
		competency standards in the lie								
	KUZ Able to de	monstrate independent, quality	and measurable performance.							
	Learning Outcon	nes Graduates charged to cours	es (CPL-MK)							
	Able to apply alg	orithm concepts and data struct	tures such as Searching, Sorting	, Queue, Stack, Linked	List, Double Linked List, Tree, Divide and Conquer,					
	Graph using the	Java programming language; Ab	le to make simple programs acc	ording to case studies	given with full responsibility and prioritize academic					





Short Course Descriptions	The Algorithms and Data Structures Practicum Course is a practical course that is expected to provide knowledge and skills in applying mathematics and basic
	engineering applied to algorithms and data structures. Algorithm and data structure Object, Array of Object, Bruteforce, Divide-Conquer, Searching, Sorting,
Learning Materials / Subjects	1. object
	2. Arrays of Objects
	3. Bruteforce
	4. Divide-Conquer
	5. search
	6. sort
	7. queue
	8. stacks
	9. Linked List
	10. tree
	11. Graph
References	Main :
	1. Goodrich, Michael T. Tamassia, Roberto. Data Structures & Algorithms in Java 4th Edition. John Wiley & Sons, Inc.
	2. Nugroho, Adi. 2008. Algorithms and Data Structures in the Java Language. Andi-Yogyakarta.
	3. Hariaynto, Bambang, 2007, Data Structure, Informatics Publisher-Bandung.
	Supporters:
	1. Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher
	2. Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Publisher
	3. NetBeans IDE Java Quick Start Tutorial (https://netbeans.org)
Instructional Media	Software : Hardware :





Name of	Lecturer	JDK Netbeans IDE Microsoft Office 1. Maybe Astining 2. Imam Fahrur Ro 3. Mustika Menta 4. Mamluatul Han 5. Rokhimatul Wa 6. Noprianto S. Ko 7. Septian Enggar	PCs/Lapt grum, ST., M.Kom. ozi, ST., MT ri, S.Kom., M.Kom i'ah, S.Kom., M.Kom. khidah, S.Pd., MT om., M. Eng. Sukmana, S.Pd., MT	ops				
Requiren Week	nents Course Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weig ht (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Able to apply basic programming concepts (selection, looping, arrays, functions) by creating programs using the Java programming language 	 Election loop Arrays Function 	Form : Online Practicum (Online) Learning methods: Discussion, Digital Module Practice Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 1 : Create a program to implement the sub-topics of selection,	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments After taking the Basic Programming review material, students are expected to be able to implement the basic concepts of programming into the Java programming language to complete case 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Understanding of basic programming concepts The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%





2	Able to create classes	Compile data	looping, arrays, and functions	1¥4¥50"	studies	Critoria:	Understanding of the	2.5%
2	 Able to create classes with the Java programming language Able to implement object creation 	 Complete data object in Java language Adding attributes to data objects Adding methods to data objects Applying data objects in case studies. 	Form : Online Practicum (Online) Learning methods: Discussion, Digital Module Practice, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 2 : Create a program for implementing objects in various case study models (example: land area program and calculating GPA)	1,44,50	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying object material students can have the ability to implement class and object creation using Java Netbeans 	 Criteria: Scoring criteria rubric Form of assessment: Practicum worksheets Independent task 	 Orderstanding of the concept of creating objects from a class The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%
3	 Students are able to make logic about arrays of objects in Java Students are able to apply the creation of an array of objects 	 Declare and instantiate an Array of Object in Java Declare and instantiate the Java language Array of object variables 	Form : Online Practicum (Online) Learning methods: Discussion, Digital Module Practice, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying array of objects, students can: Have the ability to implement arrays of 	Criteria: Scoring criteria rubric Form of assessment: Practicum worksheets Independent task	 An understanding of creating arrays of objects The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%





		1							
		 Make an assignment Array of objects Displays an Array of objects 	Assignment: Task 3 : Create a program to implement an array of objects in various case study models		objects in Java Netbeans				
4	Quiz 1		Practical exam	1X4X50"				10%	
5	 brute force algorithms and vide - conquer Students are able to apply the use of algorithms brute force and divide-conquer 	 Definition of Algorithm Brute Force Divide-conquer algorithm Big(O) Complexity Algorithm How to calculate Big(O) notation from program code 	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 4 : Create a program to implement the brute force and divide- conquer algorithms	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying the brute-force and divide-conquer algorithms, students can have the ability to implement brute-force and divide -conquer algorithms. 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Understanding of the concepts of brute force and divide -conquer algorithms The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%	
6	 Students are able to make algorithms for searching bubble sort, selection sort and insertion sort Students are able to apply algorithms of searching bubble sort, selection sort and 	 Definition of Sorting Bubble Sort Algorithm Selection Sort Algorithm 	Form : Online Practicum (Online) Learning methods: Discussion, Digital Module Practice, Problem Based Learning (PBL)	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying sorting 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Understanding of the concept of sorting algorithms The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%	





	insertion sort in the program	 Insertion Sort Algorithm 	Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 5 : Create a program to implement several types of sorting in various case studies		material students can have the ability to implement sorting methods: bubble sort, selection sort and insertion sort			
7	 Students are able to create search algorithms with sequential search and binary search Students are able to apply sequential search and binary search algorithms in the program Students are able to apply enrichment material about the merge sort algorithm in the program 	 Definition of search Sequential search/linear search algorithm Binary search algorithm Merge sort algorithm 	Form : Online Practicum (Online) Learning methods: Discussion, Digital Module Practice, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 6 : Create a program to implement several searching algorithms in various case study models	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying searching students can: Have the ability to implement the searching method: sequential search, binary search in the program, as well as the merge sort enrichment method in the program 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Understanding of the concept of searching algorithms The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%
8	UTS		Practical exam	1X6X50"				25%
9	 Students are able to create a Stack data structure Students are able to apply the stack 	 Definition of Stacks Operations on the Stack 	Form : Online Lectures (Online) Learning methods:	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps 	Criteria: Scoring criteria rubric Form of assessment:	 Understanding of the stack data structure concept The accuracy of making the program as the 	2.5%



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	algorithm in the program	 push operation pop operation Convert Infix Arithmetic Equations to Postfix using Stack 	Digital Module Practice Discussion , Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 7 : Create a program for stack implementation in various case study models		 according to the jobsheet Students do practical assignments By studying stack material students can have the ability to implement stack data structures in programs 	 Practicum worksheets Independent task 	implementation of the algorithm to complete the case study	
10	 Students are able to create Queue data structures Students are able to apply the queue algorithm in the program 	 Understanding Queue Data Structures enqueuing operation dequeue operation 	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 8 : Create a program for implementing queues in various case study models	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying queue material students can have the ability to implement queue data structures in programs 	Criteria: Scoring criteria rubric Form of assessment: Practicum worksheets Independent task	 Understanding of the concept of queue data structure The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%





11	 Students are able to create a linked list data structure Students create linked lists in the program Students are able to distinguish what problems can be solved using a linked list 	 Linked List data structure Operation add Single Linked List Operation remove Single Linked List Get Single Linked List operation Single Linked List print operation 	Form : Online Lectures (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 9 : Create programs for implementing <i>single</i> <i>linked lists</i> in various case study models	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying single linked list material students can: Have the ability to implement single linked list data structures for add, remove, get, and print operations in programs 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 An understanding of the concept of a single linked list data structure The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%
12	 Students are able to create a double linked list data structure Students are able to apply double linked lists to the program 	 Understanding the Double Linked List data structure Operation add Double Linked List Operation remove Double Linked List Operation get Double Linked List 	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL) I Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 10 : Create a program for implementing double linked lists in	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying double linked list material, students can have the ability to implement double linked list data structures for add, remove, get, and print operations in programs. 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Understanding of the concept of <i>double linked list</i> data structure The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%





13	Quiz 2	Double Linked List print operation	various case study models Practical exam	1X4X50"				10%
14	 Students are able to make tree algorithms in general Students are able to apply binary trees to programs Students are able to create a Binary Search Tree algorithm Students are able to apply Binary Search Tree to the program 	 Definition of Trees Definition of Binary Trees Definition of Binary Search Tree Binary Search Tree insert operation Binary Search Tree delete operation 	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 11 : Create a program to implement binary search trees in various operations and case study models	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying tree and binary search tree material students can: Have the ability to implement the operations that exist in the binary search tree in the program 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 An understanding of the concept of tree algorithms and binary search trees The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%
15	 Students are able to make Graph algorithms in General Students are able to apply the Graph algorithm to the program 	 Definition of Graphs Graph implementation in linked list Graph implementation in arrays 	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL)	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying graph material students can have the 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 An understanding of the concept of graph algorithms The accuracy of making the program as the implementation of the algorithm to complete the case study 	2.5%





17	UAS		Practical exam	1X4X50"				25%
16	Students are able to create java programs according to case studies using Collections in the Java library	Best Practice Collection	Form : Online Practicum (Online) Learning methods: Digital Module Practice Discussion , Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 14 : Create a program to implement a case study model using a library in Java	1X4X50"	 Conduct material review with supporting lecturers Students carry out experimental steps according to the jobsheet Students do practical assignments By studying best practice collection material students can implement collections in the Java library to complete appropriate case studies 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independent task	 Accuracy of completion of practicum worksheets Appropriateness of task answers 	2.5%
			Learning Resources: E-learning Imsslc.polinema.ac.id Assignment: Task 13 : Make a program to implement graphs in various case study models		ability to implement existing operations on graphs with arrays and linked lists			





Communication and Organizational Science



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) /	SEMESTER	DATE. PREPARATION					
			hour							
Communication Science and	RIF222010	BASIC INFORMATICS	2 Credits/3 Hours	1	July 2, 2020					
Organization			(THEORY)							
AUTHORIZATION	RPS Developer Lect	urer	MMK Coordinator	Ka PRODI						
	Siti Romlah, SE, MI	И	Atiqah Nurul Asri,	Imam Fahrur R	ozi, ST., MT.					
	Robby Anggriawan	SE., ME.	S.Pd., M.Pd.							
	Bagas Satya Dian N	ugraha, ST., MT.								
	Satrio Binusa S, SS,	M.Pd								
Learning Achievement (CP)	Learning Outcomes	of Study Program Graduate	s (CPL-Prodi)							
				J						
	Produce intermedia	ate experts in the field of info	rmation systems, who	have competence	e in managerial, design and creation of databases,					
	business processes	and business procedures in tl	ne form of software, w	ith technopreneu	ur characteristics, aware of quality with competitive					
	advantages with pr	ofessional ethics.								
	Learning Outcomes	Graduates charged to cours	es (CPL-MK)							
	Mastering concepts	and able to apply ways of or	ganizing, communicati	ng effectively and	d leading, especially in the management of					
	Information System	is projects		о ,	0. 1 1 2					
Short Course Descriptions	This course discuss	es how to organize and lead o	organizations, especially	y in managing inf	ormation systems projects, being able to					
	communicate well	with other people in a team								
Learning Materials/ subject	1. Definition and f	unction of communication								
matter	2. Cood listening technique									
	2. Good listening technique									
	3. Good speaker t	. Good speaker techniques and their implementation								
		. Good speaker techniques and their implementation								





	4. Definition and Typology of lea	adership							
	5. Leadership in the era of the ir	ndustrial revolution 4.0 (technology and information era)							
	6. organization theory								
	7. Organization and authority								
	8. Organizational behavior and o	culture							
	9. Leadership in organization								
	10. Communication methods in o	rganization							
	11. Negotiation Techniques								
	12. Presentation and speech tech	niques							
	13. Moderation and minutes	. Moderation and minutes							
References	Main :	ain :							
	1) Siti Romlah, 2018, Communic	ation and Organizational Studies, Polynema Teaching Module , Malang							
	Supporters:								
	1) Romlah, Siti, and Deddy Kusb	ianto, 2012, Organization and Leadership, Teaching Module, Polynema, Malang							
	2) Deddy KPA, Communication S	tudies in Organizations, Polynema, 2007							
	3) Gari Yukl, 2007, Leadership in	Organizations, Prentice Hall							
	4) Muchlas, Makmuri, 2005, Org	anizational Behavior, 1st Edition, Gajah University Press, Yogyakarta							
	5) Louis Carter, David Ulrich, and	d Marshall Goldsmith, 2004, Best Practices in Leadership Development and Organizational Change,							
	Pfeiffer Wiley.								
Instructional Media	Software :	vare : Hardware :							
	Microsoft Word,	oft Word, Computers/Laptops							
	MicrosoftExcel,								
	Microsoft Power Point								





			(Online)							
Name	of L	ecturer	Siti Romlah, SE, MM							
			Bagas Satya Dian Nugrah	ia, ST., MT.						
			Satrio Binusa S, SS, M.Pd							
Requir	eme	ents Course								
M in		Planned Final	Study material	Learning Forms and	Estima	Student Learning	Assessment		Assessment	Rating
g gu		Capability	(Learning materials)	Methods	ted	Experience	Criteria & Forms		Indicator	Weight
ке		(SUD-CP-IVIK)			time					(%)
(1)		(2)	(3)	(4)	(5)	(6)	(7)		(8)	(9)
1	1)	Students are able	1) The ultimate goal of	Format: Lecture	1x3x	By studying	Criteria:	•	Knowing about	
		to recognize the	lectures	Online (<i>Online</i>)	50″	Communication	Precision and		the basic	
		final goal of the	2) Definition of	(1x50)		Studios material	Form of		Communication	
		course	communication	learning video		students can:	assessment [.]		Science and	
	2)	Students are able				 Know the 	 Presentation 		Organization	
	,	to explain the	3) Effective	• Online (<i>online)</i>		ultimate goal				
		definition of	communication	(1x50') Sync \rightarrow		of lectures	Active group	•	Understand the	
		communication	concept	Vcon , discussion			discussion		meaning and	
	•			Learning methods:		 Know the definition of 	and answering		Importance of	
	3)	Students are able		Contextual Teaching		communication	(affective)		and	3%
		to understand the		and Learning (CTL)		communication	(uncenve)		Organizational	370
		concept of		Assignment:		Understand the	 questions 		Studies	
		enective		Task 1 : Find examples		concept of	about the			
		information		of case studies in		effective	definition and	•	Accuracy in	
		sustems project		everyday life in		communication	offective		solving problems	
		organizations		organization		information	communication		in case studies.	
				(1x50') Offline		systems project		•	Ability to master	
				(/ - JJ ····-		organization			the concept of	
						5			effective	
									communication	
								1	in the	





							organization of information systems projects		
2	Students are able to explain how to become a good listener	Good listening technique	 Format: Lecture Online (Online) (1x50') Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Task 2 : Game by seeking information and interacting between group members in daily life (1x50') Offline 	1x3x 50"	 Students understand and explain in their own language the technique of being a good listener in effective communication 	 Criteria: Accuracy and mastery of the material Form of assessment: Presentation Active group discussion includes asking and answering (affective) The attractiveness of the explanation of the material 	 Appropriateness and clarity in answering and explaining techniques for being a good listener in effective communication 	3%	
3	Students Able to Master the techniques of being a good speaker and their implementation	 Good speaker technique Communication constraints Practice communicating to be a good speaker in 	 Format: Lecture Online (<i>Online</i>) (1x50') Asynchronous → learning video Online (<i>online</i>) (1x50') Sync → Vcon, discussion 	1x3x 50	 Students are able to understand what are the techniques of being a good speaker 	Criteria: Accuracy and mastery of the material Form of assessment: • Presentation • Active group discussion	 Appropriateness and clarity of material in speeches Display in oration 	3%	





		front of discussion forums	 Learning methods: Contextual Teaching and Learning (CTL) Assignment: Task 3 : individual oration with the latest topic (1 x 50') Offline 		 Have expertise in communicating about information systems in front of forums 	includes asking and answering (affective)The power of communicating		
4	QUIZ 1	Evaluation	Independent task of compiling an essay	1x3x 50	-	-	-	10%
5	Students are able to explain the definition of leadership and leadership styles/typologies	 Leadership definition Leadership style/typology 	 Format: Lecture Online (Online) (1x50') Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Task 5 group discussion on ideal leadership (1 x 50') Offline 	1x3x5 0	 students can understand and explain the definition of leadership Understanding the style/typology of leadership in an organization 	 Criteria: Answer accuracy Problem solving creativity Communicatio n attraction Form of assessment: group discussion 	 answer questions about leadership Accuracy in solving problems in case studies. Ability to master the concept of leadership 	3%





6	Churche and a manufactory of		Former at a local set	12		Cuitouia		A		1
6	Students are able to	Leadership needed in	Format: Lecture	TX3X	 students can 	Criteria:	•	Accuracy of		
	explain and describe	the era of the	Online (Online)	50	understand the	Clarity answers		students in		
	the criteria for a	industrial revolution	(1x50')		concept of	questions		answering		
	leader in the industrial	4.0 (technology and	Asynchronous →		The leadership	• Clarity of		questions		
	era 4.0 (technology	information era)	learning video		The leadership		•	Clarity of the		
	and information eral		• Online (<i>online</i>)		needed in the era	content	•	contents of the		
			$(1x50')$ Sync \rightarrow		of the industrial	 Writing 		material written		
			Vcon, discussion		revolution 4.0	suitability		by students		
					(technology and					
			Learning methods:		information era	Easy for	٠	Conformity of	3%	
			 Contextual 			readers to		the written		
			Teaching and			understand		content with the		
			Learning (CTL)			• Form of		standard format		
			Assignment: Task 6			assessment:	•	Ease of writing		
			groun discussion about				•	content to read		
			the industrial revolution			 group 		content to read		
			4 0 (technology and			discussion				
			information era) (1							
			x50') Offline							
7	Capable Student	1) organization theory	Format: Lecture	1x3x	• students can	Criteria:	•	Accuracy of		-
-	Mastering and	2) Articles of	Online (Online)	50	answer questions	Precision and		students in		
	wadereter ding the	Association	(1x50')		and discuss	mastery		answering		
	understanding the	3) Chairman	Asynchronous \rightarrow		organizational	Form of		questions		
	theory in organization	4) Organizational	learning video		theory, statutes.	assessment:		questions		
		structure			chairman and	 Presentation 	٠	The accuracy of		
		Structure	• Online (<i>online)</i>		organizational			students in	2%	
			(1x50') Sync $ ightarrow$		structure	 Active group 		presenting	370	
			Vcon, discussion		Structure	discussions		information		
			Looming mothodo			include asking		system projects		
						and answering		in front of forums		
			 Contextual Togehing and 			(affective)		and packaging		
			Learning (CTL)			questions		them into a good		
			Leurning (CTL)							





			Assignment: Task 5 group discussion about organizing And Organizational Structure (1 x50') Offline			about effective organizations	and interesting presentation		
8	Capable Student Understand the definition of authority, power and responsibility in an organization	 Authority Power Responsibility in organization 	 Format: Lecture Online (Online) (1x50') Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignment: group discussion about Responsibilities in the organization (1 x50') Offline 	1x3x5 0	 students can understand the definition of authority, power and responsibility in an information system organization 	Criteria: Accuracy and mastery of the material Form of assessment: • Ability to make presentations • Interest in making presentations	 Student's ability to understand authority, power and responsibility in an information system organization 	3%	
9	Written test for week 1 to 8 material	UTS	UTS	1X4X5 0″	UTS	UTS	UTS	20%	
10	Capable Student Mastering the procedures for running a team in an	 Definition of organizational culture 	 Format: Lecture Online (Online) (1x50') 	1x3x5 0"	 students can master and answer questions 	Criteria: Precision and mastery Form of assessment:	 Student's ability to understand and explain the definition of organizational 	3%	





	organization (organizational behavior and culture)	2) 3) 4)	Functions/roles of organizational culture Type/type of organizational culture The process of forming organizational culture and communication	Asynchronous → learning video Online (<i>online</i>) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Assignment : group discussion about organizational behavior and culture (1 x50') Offline		about definitions, functions/roles , types/types, the process of forming organizational culture	 Presentation Active group discussion includes asking and answering (affective) questions about organizational behavior and culture 	culture, function/role of organizational culture, type/type, process of forming organizational culture	
11	Capable Student implement leadership in an organization	1)	The practice of running a team within an information systems project organization	 Format: Lecture Online (Online) (1x50') Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: group discussion about the 	1x3x5 0	 students can do hands-on practice on how to run an organizational team in groups 	 Criteria: Fluency and appropriatenes s in running the team Precision and mastery Form of assessment: Presentation Active group discussion includes asking 	 The ability of students to run an information system organization team smoothly and correctly 	3%





12	Capable Student understand effective communication methods in organizations	2)	The practice of implementing effective communication methods within an organization	organization of an offline information system project (1 x50'). Format: Lecture • Online (Online) (1x50') Asynchronous → learning video • Online (online) (1x50') Sync → Vcon, discussion Learning methods: • Contextual Teaching and Learning (CTL) Assignment: group discussion about effective communication methods within an organization (1 x50') Offline	1x3x5 0″		students can do direct practice on how to implement effective communication methods in an organizational team	and answering (affective) Criteria: Precision and mastery Form of assessment: • Presentation • Active group discussion includes asking and answering (affective) questions about the definition and function of effective communication	- Students' ability to implement effective communication methods within an organizational team	3%	
13	QUIZ	Eva	aluation	Independent task of compiling the Organizational Structure and job descriptions	1x3x5 0	-		-	-	10%	
14	Capable Student Mastering techniques in negotiating	1)	Negotiation definition	 Format: Lecture Online (Online) (1x50') 	1x3x5 0	- St ma que	udents can ster and answer estions about	Criteria: Precision and mastery	Student's ability to understand and explain the definition	3%	





		 Negotiation approach Negotiation characteristics Negotiation steps 	 Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: group discussion on Negotiation Steps (1 x50') Offline 		the definition of negotiation, negotiation approach, characteristics of negotiation and steps of negotiation	 Form of assessment: Presentation Active group discussion includes asking and answering (affective) questions about the definition and function of effective communication 	of negotiation, negotiation approach, characteristics of negotiation and negotiation steps		
15	Capable Student Mastering good presentation techniques in an information system project Applying good presentation techniques in an information system project in a discussion forum	 Good presentation technique in an information system project in a discussion forum 	 Format: Lecture Online (Online) (1x50') Asynchronous → learning video Online (online) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: group discussion on Offline information system 	1x3x5 0	 students can make presentations about information systems projects in a discussion forum 	Criteria: Precision and mastery Form of assessment: • Presentation • Active group discussion includes asking and answering (affective) questions about the definition and function of effective communication	 Accuracy of students in answering questions The accuracy of students in presenting information system projects in front of forums, and packaging them into a good and interesting presentation 	3%	





			project presentation techniques (1 x50').			 Interest in making presentations 			
16	Capable Student Mastering the concept of moderation and minutes	 Moderation Minutes 	 Format: Lecture Online (<i>Online</i>) (1x50') Asynchronous → learning video Online (<i>online</i>) (1x50') Sync → Vcon, discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Task 5: group discussion on the concept of moderation and minutes (1 x 50') Offline 	1x3x5 0	 students can Master and answer moderating questions and minutes 	Criteria: Precision and mastery Form of assessment: Presentation Active group discussion includes asking and answering (affective) questions about the definition and function of effective communication	 Students' ability to understand and explain about moderation and minutes 	3%	
17	UAS	Evaluation	Online Writing Exam	1x3x5 0	-	-	-	20%	





3rd semester

1. Interface Design



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE COURSE CULTURE		WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION
Interface Design	RTI213001 Basic Informatics		2 credits/ 4 hours	3	30 20 21
AUTHORIZATION	RPS Developer Lecturer		MMK Coordinator	Ka PRODI	
	1. Anu S.Sn 2. Retn 3. Muh Pam 4. Aria M.Ko 5. Aulia SST.,	grah Nur Rahmanto, ., M.Ds. o Damayanti, S.Pd., MT ammad Unggul enang, S.St., MT di Retno Ririd, S.Kom., om. a Zahra Musthafawi M.Kom.	Maybe Astiningrum, ST., M.Kom.	Imam Fahrur R	ozi, ST., MT.
Learning	Learning Outc	omes of Study Program Grad	duates (CPL-Prodi)		
Achievement (CP)	S8 Internali	ze academic values, norms, a	ind ethics.	,	
	S9 Demons	trate a responsible attitude to	owards work in the fi	eld of expertise ir	ndependently.
	PP2 Masterir	ng ICT product development r	methods to provide th	ne right solutions	through one or more application domains.





	 KK1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned. KU2 Able to demonstrate independent, quality and measurable performance. Learning Outcomes Graduates charged to courses (CPL-MK)
	Mastering the concept of Introduction to IMK, Human Factors, Variety of Dialogues, Input Output Tools, Display Design, Ergonomic Aspects, Evaluation Techniques.
Short Course Descriptions	This course material covers the basic concepts of aspects of the relationship between humans and computers and is able to analyze, design and implement this theory in making interfaces between humans and computers
Learning Materials / Subjects	 Introduction to Human and Computer Interaction Human Factors Variety of Dialogues Interactive Tools Creating View Worksheets and View Semantic Nets Storyboards and Prototyping Ergonomic Aspect Interface Design Evaluation Techniques
References	Main : Galitz, WO (2007). The essential guide to user interface design: an introduction to GUI design principles and techniques . John Wiley & Sons. Supporters:
	 Teaching Module of Human and Computer Interaction Malang State Polytechnic Santosa I. (2004), Human and computer interaction, theory and practice, Andi Offset, Yogyakarta





Instructional N	ledia	Software :	Hardw	/are :				
		 Photoshop CorelDraw Adobe Exper Design 	ience	Laptops /Comp	outers			
Name of Lecturer		 Anugrah Nur Retno Damay Muhammad Ariadi Retno 10. Aulia Zahra Nur 	 Anugrah Nur Rahmanto, S.Sn., M.Ds. Retno Damayanti, S.Pd., MT Muhammad Unggul Pamenang, S.St., MT Ariadi Retno Ririd, S.Kom., M.Kom. Aulia Zahra Musthafawi SST., M.Kom. 					
Requirements								
M Planned Fi in Capabilit g (Sub- CP-M gu Ke	nal / K)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weigh t (%)
(1) (2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
 a. Knowin and explaining what is human an computer interactio (C2) b. Explain the field of 	g Hu int cof d re co n sys to	uman and computer terface, basic concepts human and computer lations, fields of study lated to human and mputer interaction, stem development ols	Online, Discovery Learning	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou $s \rightarrow$ learning videos - Assignments (1 x50')	Listen and ask if something is not understood	Question and answer	Students are able to explain the concept of human and computer interfaces, basic concepts of human and computer relations, fields of study related to human and computer interaction, system development tools	2.3%





	related to IMK (C2) c. Explain system developmen t tools (C2)						
2	Student is able explain the basic concepts of human factors, computer factors and be able to explain the relationship between ability and human limitations with the design process system interaction software and hardware (C2)	 human factor : Five senses Limitations human factor Mental influence and psychology against design interaction Individual differences Computer factor: Development interaction technology Design link interaction with technology inputs/outputs Hardware technology or software for users with special needs 	Online, Discovery Learning	watching tutorials, doing exercises.	Questions and answers, presentation s and discussion of group discussions and evaluation of the results of the discussion	 Students are able to explain human factors which include physical, psychological/mental, and sociological aspects. Students are able to explain the development of computer system technology, especially in aspects of user and system interaction design. Students are able to explain several computer system technologies intended for users with special needs. 	2.3%





3	Able to group information based on the appropriate category and represent it with a symbol (icon) (C3)	•	Categorize information into categories. The use of symbols/images/icon s that can represent information in a mind map.	Online, Discovery Learning	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Carry out a task.	Task collection	 Students are able to categorize information into several categories. Students are able to use symbols/images/icons that can represent information in a mind map. 	2.3%
4	Students are able to explain and apply the basic concepts of dialogue design and dialogue styles/variet y of dialogues (C2) (C3)	• • • •	CommandLanguage WIMPs Direct Manipulation (DM) PDA & Pen Speech and natural language Software User Interfaces	Online, Discovery Learning	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Question and answer	Q&A, discussion	Students are able to explain and detail the basic concepts of dialog design and dialog style and can use user interface software	2.3%
5	Quiz 1	•	Quiz 1	Exam	3 x 50'	Quiz 1	Quiz 1	Quiz 1	5%
6	Students can explain the basic concepts of devices used in human and	•	Overview, utilities Types of task analysis Source and use of information	Seminars, Assignment s	3 x 50'	Listening to seminars, doing assignments	Q&A, discussion	Students can explain the tools used in human- computer interaction and can present data	2.3%





	computer	• Data I/O						
	(C2)	Represents data						
7	Students explain the developmen t of interactive tools from time to time. (C2)	 a. The latest development of interactive tools used by humans from time to time b. Textual input tool c. <i>Pointing and</i> picking device d. Touch sensitive panel (<i>touch-screen</i>) e. Display screen f. Display processor g. Effect of interactive devices 	Online, Discove ry Learnin g	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Task presentatio n	Q&A, discussion	Students can explain the latest developments in interactive devices used by humans from time to time.	2.3%
8	 a. Students are able to explain the principles of computer system interface design on various platforms and contexts of need. (C2) b. Students are able to 	 a. Understand the principles and guidelines of display design b. Understand and be able to make simple tools for display design c. understand and be able to create a display semantic net 	Online, Discovery Learning	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Listening and working on assignments	Questions and answers and discussion	 a. students are able to make a display design with a simple tool in the form of a Display Worksheet b. students are able to make Display Semantic Nets. 	2.3%





	design views using View Worksheet s and View Semantic Nets (C3)							
9	UTS	UTS	Exam	1 x 3 x 50 ' - Online (Online) (2 x50') Asynchronou s \rightarrow learning videos - Assignments (1 x50')	Take exams	Exam results	Students can work on exam questions well and the results are correct.	30%
1 0	Students are able to know and be able to explain and follow the stages of interface design using storyboards and prototypes (C2) (C3)	 a. Understand the principles and instructions for display design with storyboards and prototypes b. Understand and be able to create storyboards and prototype user interfaces 	Online, Discove ry Learnin g	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Listening and working on assignments	Questions and answers and discussion	Students can design user interfaces using storyboards and user interface prototypes.	2.3%





1 1	Knowing and being able to explain the influence of ergonomic aspects on the design of human interfaces with computers. (C2)	 a. Know and be able to explain measurements and anthropometrics b. Know and be able to explain the ergonomic aspects of the work station c. Know and be able to explain lighting effects, display screens, temperature and sound quality, sound disturbances, occupational health and safety, work habits 	Online, Discove ry Learnin g	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	listening	Questions and answers and discussion	Measurement and anthropometrics, ergonomic aspects of work stations, lighting effects, display screens, temperature and sound quality, sound disturbances, occupational health and safety, work habits.	2.3%
1 2	Know and be able to explain the evaluation techniques for the design of human interfaces with computers. (C2)	 Evaluation technique Understanding Method Evaluation tools and devices Evaluation flow Implementation example 	Online, Discove ry Learnin g	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	listening	Questions and answers and discussion	Able to explain about evaluation techniques Able to utilize various kinds of evaluation techniques	2.3%
1 3	Quiz 2	Quiz 2	Quiz 2	3 x 50'	Quiz 2	Quiz 2	Quiz 2	5%
1 4	Students are able to explain and apply previously taught	User Interface Prototyping	Presentatio n and Assignment Demo	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50')	Task progress presentation	Great task progress	Students are able to explain the progress of the prototyping user interface made	2.3%





	material in the form of case studies and making application UI designs (major course assignments) (C2) (C3)			Asynchronou s → learning videos - Assignments (1x50')					
1 5	Students are able to explain and apply previously taught material in the form of case studies and make application UI designs (large course assignments) (C2) (C3)	User Interface Prototyping	Presentatio n and Assignment Demo	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou s → learning videos - Assignments (1 x50')	Task progress presentation	Great task progress	Students are able to explain the progress of the prototyping user interface made	2.3%	
1 6	Students are able to explain and apply previously taught material in the form of	User Interface Prototyping	Presentatio n and Assignment Demo	1 x 3 x 50 ' - Online (<i>Online</i>) (2 x50') Asynchronou $s \rightarrow$ learning videos	Task presentation	Great task progress	Students are able to explain the progress of the prototyping user interface made	2.3%	





	case studies and make application UI designs (large course assignments) (C2) (C3)			- Assignments (1 x50')				
1 7	UAS	UAS	Exam	3 x 50'	Take exams	Exam results	Students can work on exam questions well and the results are correct.	30%

TOTAL QUIZ, ASSIGNMENT, UTS, AND UAS

Quiz	: 2	UTS: 1	Quiz Weight: 10% UTS Weight: 30%
Task	: 4	UAS: 1	Assignment Weight: 30% UAS Weight: 30%

EVALUATION





Quality Management System



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 BUSINESS INFORMATION SYSTEMS

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION	
Quality Service Management	RTI213002	Basic Informatics	2 credits/ 4 hours	5		
AUTHORIZATION	RPS Developer Lecturer		MMK Coordinator	Ka PRODI		
	1. Septian Enggar Sukmana, S.Pd., MT		Hendra Pradibta SE., MSc			
Learning Achievement (CP)	Learning Outcomes of Study Program Graduates (CPL-Prodi)					
	S3 - Contribute to improving the quality of life in society, nation, state, and progress of civilization based on Pancasila P7					
	 S9 - shows a responsible attitude towards work in the field of expertise independently; P7 - supervision and evaluation of the completion of work assigned to workers under their responsibility P8 - Able to carry out the process of self-evaluation of work groups under his responsibility, and able to manage learning independently KU - Mastering theoretical concepts in the field of Business Information Systems knowledge in general and theoretical concepts in the field of Multiplatform System Development or E-Business in depth, and able to formulate procedural problem solving Learning Outcomes Graduates charged to courses (CPL-MK) 					
	Students can have technology and bus	Students can have knowledge about quality service management related to business processes in an information system in the field of technology and business fields.				




	Providing knowledge about quality assurance in a business organization automatically computerized and standardized auditing.
Short Course Descriptions	This course provides an understanding of the concept of quality service management / quality management system (QMS) and its
	application to the business processes of an organization.
Learning Materials / Subjects	1. Development of Information Technology Law
	2. Copyright law
	3. Brand and <i>domain name law</i>
	4. Media law
	5. Jurisdiction in Cyberspace (Cyberjuristicion)
	6. Law On <i>E-commerce</i>
	7. Privacy
	8. Data protection
	9. Cybercrimes and Countermeasures
	10. Evidence and Electronic Evidence (digital Evidence)
	LEARNING METHODS:
	1. Lectures / Expert Lectures,
	2. Problem Based Learning/FGD
	3. Student Centered Learning
	4. Group discussion
References	Main :
	1. Ravi Kalakota, Marcia Robinson, "e-Business 2.0: Roadmap for Success (2nd Edition)", Addison-Wesley Professional, 2000.





		2. Turban, Efraim, David Pearson Prentice Hal	d King, Dennis Viehl I, New Jersey 2004	and, Jae Le	e. Electronic Com	merce A Managerial Per	spective International Edit	tion.
	Su	ipporters:						
Instruct	ional Media So	oftware :	Hardware :					
		 Internet browsers Microsoft Off PDFViewer 	fice					
Name o	f Lecturer	1.						
Require	ments Course							
Week	Planned Final Capabilit (Sub-CP-MK)	y Study material (Learning materials)	Learning Forms and Methods	Estimat ed time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Able to explain the development of information technology la	 Definition of Information Technology Laws governing information technology in 	Form : Offline (<i>On-site</i>) Learning methods:	1x4x50" Sync - introducto	 Describe informati on technolog y Explain 	Criteria: Scoring criteria rubric Form of assessment:	 Clarity of definition of information technology Accurate identification of differences in 	5%





		 Laws governing information technology in Indonesia 	Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : In each country, determine the differences in information technology regulations that apply in that country and the differences with the regulations that apply in Indonesia! (1x50') Offline	materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	difference s in informati on technolog y regulatio ns between countries	asking and answering questions • Written test, about solving case studies	technology regulations that apply in each country		
2	Able to identify the development of information technology regulations in Indonesia	 The development of information technology law in Indonesia 	Form : Offline(<i>On-site</i>)	1x4x50' Sync - introducto ry	 State the level of law and regulatory basis for informatio 	Criteria: Scoring criteria rubric Form of assessment:	 The level of accuracy of legal products that regulate information 	5%	





		 Characteristics of information technology law in each government period 	Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Explain the differences in the scope of information technology regulatory focus between the old, new, and reform orders! (1x50') Offline	materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	n technology in Indonesia 2. Explain the differences in informatio n technology laws for each governmen t period	 Active group discussion includes asking and answering questions Written test, about solving case studies 	technology in Indonesia 2. The accuracy of information technology law differences in each administration		
3	Knowing to identify the benefits of information technology regulations in Indonesia for	 Information technology law policy hierarchy in Indonesia Characteristics of quality assurance 	Form : Offline(<i>On-site</i>)	1x4x50" Sync - introducto ry	1. Describe the hierarchy of information technology	Criteria: Scoring criteria rubric Form of assessment:	 The accuracy of mentioning the information technology policy 	5%	





	organizational quality assurance	 in an information system 3. Information technology regulatory scope for organizational quality assurance 4. Benefits of information technology regulations related to organizational quality assurance 	Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Identify the benefits of information technology regulations that apply in Indonesia for quality assurance of a business based on the given organizational form!	materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	policies in Indonesia 2. Explain the impact of information technology regulations in Indonesia on business activities and quality assurance	•	Active group discussion includes asking and answering questions Written test, about solving case studies	2.	hierarchy in Indonesia Clarity of opinion on the impact of information technology regulations in Indonesia on business activities and quality assurance		
4	QUIZ I	Evaluation of material at meetings 1-3	Form : Offline(<i>On-site</i>)	1x2x50" Sync - case study				1.	The accuracy of the points of opinion regarding	5%	





	Able to explain the concept	1	Definition of	Evaluation media: E-learning Ims.polinema.ac.id	assignme nt (2x50')	1	The	Criteria:	1	the completion of the case study	E 9/	
5	Able to explain the concept and characteristics of copyright law in Indonesia	1. 2. 3. 4.	Definition of copyright Copyright form Characteristics of each type of copyright Types of copyright claims for information technology works Copyright function for quality management	Form : Offline (On-site) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Explain the benefits of copyright related to quality assurance activities	IX4X50" Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	1.	ine concept of copyright and its benefits for a business entity	 Scoring criteria rubric Form of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies 	1.	Accurate description of the characteristics of each type of copyright Accuracy and completeness of copyright benefits for software house company quality management !	5%	





			in a software house organization ! (1x50') Offline				Oritoria			501	
6	able to explain and analyze the concept of brands and domain names and the laws that govern them	 Brand definition Domain name definition Brand and domain name regulations in Indonesia 	Form : Offline (<i>On-site</i>) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 Assignment : Brand and domain name linkage analysis for an information technology company quality assurance!	1x4x50" Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	1.	Mention the definition of brand and domain name Explain the parties involved in issuing brands and domain names in informatio n technology companies Explain the benefits of brands and domain names in quality assurance for informatio n	 Criteria: Scoring criteria rubric Form of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies 	1.	Accurate explanation of brand and domain name definitions Knowing the parties involved in issuing brands and domain names in information technology companies Explain the benefits of brands and domain names in quality assurance for information technology companies	5%	





				(1x50') Offline			technology companies						
7	Explain and analyze broadcasting regulations and media utilization	 1. 2. 3. 4. 	Definition of media and electronic media Types of electronic media and business processes The role of electronic media for quality assurance of an information technology company	Form : Offline (<i>On-site</i>) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Analysis of the role of electronic media related to the quality assurance of an information technology company! (1x50') <i>Offline</i>	1x4x50" Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	1.	Introducti on to types of electronic media The role of electronic media for the company's business processes Benefits of electronic media for quality assurance of an informatio n technolog y company	Crit Sco For	eria: ring criteria rubric m of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies	1.	Clarity of definition and types of electronic media The accuracy of the analysis of the role of electronic media for the quality assurance of an information technology company	5%	





8	UTS			1x2x50"	Doing midterm exam questions			10%
9	Explain and analyze the concept of jurisdiction in the virtual world and its impact on an information system	 Definition of <i>Cyberjuristics</i> Implementation of <i>Cyberjuristicion</i> in Indonesia Impact of <i>Cyberjuristicion</i> in Indonesia <i>Cyberjuristicion</i> cases related to information systems in Indonesia 	Form : Offline (<i>On-site</i>) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Make an analysis of the influence of <i>Cyberjuristicion</i> on information systems developed for government agencies !	1x4x50" Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	 Definition, impact, and implementatio n of <i>Cyberjuristicio</i> n Analysis and development of <i>cyberjuristic</i> cases in Indonesia 	 Criteria: Scoring criteria rubric Form of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies 	 Accurate explanation of the definition, impact, and implementation of cyberjuristics in Indonesia Clarity analysis of the influence of Cyberjuristicion on information systems developed for government agencies 	10%





10	Explain and analyze <i>e-commerce regulations</i> in Indonesia	 Definition of <i>e</i>- commerce <i>e</i>-commerce business processes Forms of <i>e</i>- commerce regulation in Indonesia 	(1x50') Offline Form : Offline (<i>On-site</i>) Learning methods: Group discussion Case study	1x4x50" Sync - introducto ry materials (2x50') - discussio	1.	Explain the definition and business processes of e- commerc e	Criteria: Scoring criteria rubric Form of assessment: • Active group discussion includes asking and answering	1.	<i>e-commerce</i> business processes in Indonesia <i>e- commerce</i> business processes in Indonesia	10%	-
			Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Make an analysis of the influence of the ITE Law regulations on <i>e-commerce</i> <i>business</i> <i>processes</i> in Indonesia ! (1x50') Offline	n of case studies (2x50') - Structured task (1x50')	2.	the regulator y scheme of <i>e</i> - <i>commerc</i> <i>e</i> in Indonesia	 Written test, about solving case studies 				





11	Explaining the definition of	1.	Privacy definition	Form :	1x4x50"	1.	State the	Criteria:	1.	Accuracy explains	10%	
	privacy, identification of privacy problems and	2.	Privacy type	Offline (On-site)	Sync		definition of privacy	Scoring criteria rubric		the definition of privacy in the field		
	analysis of solutions to	3.	Privacy practices		- introducto		in the field			of information		
	privacy cases implemented by information technology-	4.	Privacy case in Indonesia	Learning methods:	ry materials		informatio n	Form of assessment: Active group	2.	Accuracy in		
	based companies	5.	Privacy case solutions ever	Group discussion Case study	(2x50') -		technolog y	discussion includes asking and		privacy violations		
			implemented		discussio n of case	2.	State the	answering questions		related to the		
				Learning Resources:	studies (2x50')		types and cases of	 Written test, about solving case studies 		individual qualities		
				E-learning	- Structured	3.	privacy Explaining			of the violations		
				ins.poinema.ac.iu	task (1x50')		case solutions					
				Assignment:			and perspectiv					
				Week 1 Assignment :			es on solving					
				Make an analysis of the feasibility of			privacy cases					
				resolving privacy cases in Indonesia			raised.					
				in terms of the organizational/pers								
				onal quality of the perpetrators of								
				privacy violations!								
				(1x50') Offline								





12	Explain and explain the definition of digital data protection and analyze cases related to data protection and the impact on the reputation and quality of related organizations	 1. 2. 3. 4. 	Definition of data protection The relationship between privacy and data protection Data protection design in information systems Data protection case	Form : Offline (<i>On-site</i>) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 assignment : Make an architectural design plan for data protection that should be applied to information systems that apply to the central government! (1x50') Offline	1x4x50" Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	1.	State the definition of personal data protection State the case for personal data protection Designing personal data protection designs, especially in informatio n systems for governmen t agencies	Criteria: Scoring criteria rubric Form of assessment: • Active group discussion includes asking and answering questions • Written test, about solving case studies	1.	Be able to explain the definition of data protection related to cases that have occurred Accuracy of data protection architecture design in information systems	10%	
13					1X2X50"						10%	





14	1.	Explain and define	1.	Definition of	Form :	1x4x50"	1.	Explain the	Criteria:	1.	Accurate	10%	T
		cybercrime and identify		cybercrime	Offline (On-site)	Sync		things that	Scoring criteria rubric		description of the		
		<i>cybercrime</i> cases in Indonesia	2.	Characteristics of		-		arive the			attributes of		
	2			cybercrime		introducto		of	F		cybercrime		
	Ζ.	<i>cybercrime</i> on the	3.	Examples of	methods:	ry materials		cybercrime	Form of assessment:	2.	Accurate		
		quality of a company		cybercrime cases	Group discussion	(2x50')	2.	Describe	 Active group discussion includes 		explanation of the		
		engaged in information	4.	The impact of	Case study	-		the characteris	asking and		things that		
		technology		cybercrime on every aspect		discussio		tics of	answering questions		development of		
					Learning	n of case studies		cybercrime	 Written test, about 		cybercrime		
					Resources:	(2x50')	3.	Describe	solving case studies	3.	cybercrime case		
					E-learning	-		cybercrime			analysis and its		
					Ims.polinema.ac.id	Structured task		Indonesia			quality and		
						(1x50')	4.	Analyzing			reputation of an		
					Assignment:			the impact			organization		
					Week 1			0f cybercrime					
					Assignment :			on the					
					Make an analysis of the impact of			quality of					
					cybercrime that has			an organizatio					
					occurred on the quality and			n					
					reputation of								
					banking organizations in the								
					types of BUMN and								
					Private!								
					(1x50') Offline								





15	1. cybercrime case	Cybercrime case	Form :	1x4x50"	1.	State	Criteria:	1.	Documenting	5%	
	handling scheme	studies	Offline (On-site)	Sync		security	Scoring criteria rubric		attacks on network		
	2. Analyzing steps to prevent <i>cybercrime</i> <i>cases</i> in terms of improving organizational quality		Utiline (<i>On-site</i>)Learning methods:Group discussion Case studyLearning Resources:E-learning Ims.polinema.ac.idAssignment:Week 1 Assignment : Make an analysis of the best <i>cybercrime</i> handling steps you've ever done!(1x50') Offline	Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	 2. 3. 4. 5. 	needs Mention basic issues on security Describe the types of threats and attacks Provide opinion on security managem ent Describe ways to secure communic ations and networks	 Scoring criteria rubric Form of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies 	 2. 3. 4. 5. 6. 7. 	and computer security that move very quickly. Describe practical security practices Understand the basic elements of system security Describe several types of attacks on network security. Describes the fundamental mistakes that organizations make in security management. Discuss some of the main technologies for system security Understand some of the main technologies for the security of network		





digital evidencedigital evidence and digital evidencedigital evidence and digital forensicsOffline (On-site)Syncthe difference infodudoScoring criteria rubricdistinguishing between an informationAnalyze the importance of digital evidence tracking activities for handling cases related to assurance and improving the quality of information systems2. Digital evidence toolsLearning methods:''' assuranceForm of assessment: assing and assing and assing and assing and digital forensicsCalifier on a assing and digital forensics2. Clarity in analyzing digital forensics assing and assing and assing and digital forensicsCalifier on a system assing and assing and assing and assing and digital forensics2. Clarity in analyzing digital forensics4. Digital file inspection methodLearning Fesources: Resources:'' assignment: Meso tracking digital forensics'' assignment:'' assignment: Meso tracking digital forensics'' assignment: Meso tracking digital forensics'' assignment: Meso tracking digital evidence for guaranteeing and improving the quality of information system girl'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance'' assurance<	16	Explain the definition of	1. Definition of	Form :	1x4x50"	1.	Explain	Criteria:	1.	Accuracy in	5%	6	Τ
Explain the types of digital evidenceand digital forensicsand digital forensicsand digital forensicsand digital forensicsbetween an information systemsbetween an and digital discussion case studybetween an and digital discussion case studybetween an and digital discussion and digital forensicsformation systemsbetween an and digital discussion case studyformation systemscase studycase studycase study <td></td> <td>digital evidence</td> <td>digital evidence</td> <td>Offline (On-site)</td> <td>Sync</td> <td></td> <td>the</td> <td>Scoring criteria rubric</td> <td></td> <td>distinguishing</td> <td></td> <td></td> <td></td>		digital evidence	digital evidence	Offline (On-site)	Sync		the	Scoring criteria rubric		distinguishing			
(1x50') Offline		digital evidence Explain the types of digital evidence Analyze the importance of digital evidence tracking activities for handling cases related to assurance and improving the quality of information systems	 digital evidence and digital forensics 2. Digital evidence tools 3. The difference between auditing and digital forensics 4. Digital file inspection method 	Offline (<i>On-site</i>) Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Week 1 Assignment : Make an analysis of the benefits of tracking digital evidence for guaranteeing and improving the quality of information systems! (1x50') Offline	Sync - introducto ry materials (2x50') - discussio n of case studies (2x50') - Structured task (1x50')	2.	the differenc e between an informati on systems audit and digital forensics Describe one of the methods in digital forensics	Scoring criteria rubric Form of assessment: Active group discussion includes asking and answering questions Written test, about solving case studies	2.	between an information system audit and digital forensics in the form of a case study Clarity in analyzing digital forensics difficulties for information system quality assurance Clarity in analyzing the importance of digital forensics for information system quality assurance			





17	UAS	Exam	1x2x50"	Work on end	Mark	Answer accuracy	10%	1
				of semester				l
				exam				ł
				questions				





Artificial intelligence

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MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D4 Informatics Engineering

		SEMESTER LEARNING	PLAN (RPS)				
COD	E	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION		
RTI22	13003	Elementary Course	2 credits/ 4 hours	3	July 7, 2020		
RPS I	Developer Lectu	irer	MMK Coordinator	Ka PRODI			
Arie Arwi Baga Ika K M. H Must Vipka Mam	Rachmad Syulist n Datumaya Wa s Satya Dian Nu usumaning Putr asyim Ratsanjar cika Mentari, S.K as Al Hadid Firda iluatul Hani'ah, S	cyo, S.Kom., M.Kom. hyudi Sumari, Ir., ST, MT, Dr., IPM, ASEAN Eng., ACPE. graha, ST., MT. i, S.Kom., MT ni, S.Kom., M.Kom. com., M.Kom. aus, ST, MT S.Kom., M.Kom.	Maybe Astiningrum, ST., M.Kom.	Imam Fahrur Rozi	, ST. <i>,</i> MT.		
S8 Internalize academic values, norms, and ethics. S9 Demonstrate a responsible attitude towards work in the field of expertise independently. PP1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc. engineering science, and engineering principles in the ICT field in depth. PP4 Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to general principles in the second principles in							
	CODI RTI2: RPS I Arie Arwi Baga Ika K M. H Must Vipka Mam Learn S8 S9 PP1 PP4	CODE RTI213003 RPS Developer Lectu Arie Rachmad Syulist Arwin Datumaya Wa Bagas Satya Dian Nu Ika Kusumaning Putr M. Hasyim Ratsanjar Mustika Mentari, S.K Vipkas Al Hadid Firda Mamluatul Hani'ah, S Learning Outcomes S8 Internalize acad S9 Demonstrate a PP1 Mastering the engineering sci PP4 Mastering the alternative solu	SEMESTER LEARNING CODE COURSE CULTURE RTI213003 Elementary Course RPS Developer Lecturer Arie Rachmad Syulistyo, S.Kom., M.Kom. Arwin Datumaya Wahyudi Sumari, Ir., ST, MT, Dr., IPM, ASEAN Eng., ACPE. Bagas Satya Dian Nugraha, ST., MT. Ika Kusumaning Putri, S.Kom., M.Kom. Mustika Mentari, S.Kom., M.Kom. Vipkas Al Hadid Firdaus, ST, MT Mamluatul Hani'ah, S.Kom., M.Kom. Learning Outcomes of Study Program Graduates (CPL-Prodi) S8 S9 Demonstrate a responsible attitude towards work in the field of exper PP1 Mastering the concepts of applied mathematics, basic ICT knowledge engineering science, and engineering principles in the ICT field in dept PP4 Mastering the principles of intelligent computing in logical and mathematics alternative solutions in depth.	SEMESTER LEARNING PLAN (RPS) CODE COURSE CULTURE WEIGHT (credits)/hour RTI213003 Elementary Course 2 credits/ 4 hours RPS Developer Lecturer MMK Coordinator Arie Rachmad Syulistyo, S.Kom., M.Kom. Maybe Astiningrum, ST., Arwin Datumaya Wahyudi Sumari, Ir., ST, MT, Dr., IPM, ASEAN Eng., ACPE. Maybe Astiningrum, ST., Bagas Satya Dian Nugraha, ST., MT. M.Kom. Ka Kusumaning Putri, S.Kom., M.Kom. M.Kom. Mustika Mentari, S.Kom., M.Kom. Mission Ratsanjani, S.Kom., M.Kom. Vipkas Al Hadid Firdaus, ST, MT Mamluatul Hani'ah, S.Kom., M.Kom. Learning Outcomes of Study Program Graduates (CPL-Prodi) 58 S8 Internalize academic values, norms, and ethics. S9 Demonstrate a responsible attitude towards work in the field of expertise independently. PP1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Data engineering science, and engineering principles in the ICT field in depth. PP4 Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & alternative solutions in depth.	SEMESTER LEARNING PLAN (RPS) CODE COURSE CULTURE WEIGHT (credits)/hour SEMESTER RTI213003 Elementary Course 2 credits/ 4 hours 3 RPS Developer Lecturer MMK Coordinator Ka PRODI Arie Rachmad Syulistyo, S.Kom., M.Kom. Maybe Astiningrum, ST., Imam Fahrur Rozi, Arrie Rachmad Syulistyo, S.Kom., M.Kom. Maybe Astiningrum, ST., Imam Fahrur Rozi, Arwin Datumaya Wahyudi Sumari, Ir., ST, MT, Dr., IPM, ASEAN Eng., ACPE. Maybe Astiningrum, ST., Imam Fahrur Rozi, Bagas Satya Dian Nugraha, ST., MT. Ika Kusumaning Putri, S.Kom., M.Kom. M.Kom. Imam Fahrur Rozi, Mustika Mentari, S.Kom., M.Kom. Mistering Outcomes of Study Program Graduates (CPL-Prodi) Starting Outcomes of Study Program Graduates (CPL-Prodi) S8 Internalize academic values, norms, and ethics. S9 Demonstrate a responsible attitude towards work in the field of expertise independently. PP1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer net engineering science, and engineering principles in the ICT field in depth. PP4 Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof alternative solutions in depth.		





	KK1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields							
	(vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).							
	KK4 Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.							
	KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in							
	accordance with work competency standards in the field concerned.							
	KU2 Able to demonstrate independent, quality and measurable performance.							
	Learning Outcomes Graduates charged to courses (CPL-MK)							
	Able to understand Problem Solving, Knowledge Representation, Expert Systems, Natural Language Processing, Uncertainty, Fuzzy Logic, Neural Networks, Searching, Planning (C2); Understand various kinds of artificial intelligence algorithms and their application to solve problems in various fields; Able to analyze appropriate artificial intelligence techniques to solve problems with full responsibility and ethics:							
Short Course Descriptions	Reasoning (Fuzzy Logic), Problem Solving(BFS, DFS, Hill Climbing, A*), Knowledge Representation(Agent, Forward and Backward Chaining, Uncertainty:Bayes Theorem), Neural Networks, Natural Language Processing							
Learning	Artificial intelligence							
Materials / Subjects	(Reasoning) : Fuzzy tsukamoto, sukamoto, mamdani							
	 (Problem Solving) : Breadth-First Search, Depth-First Search, Best-First Search, Hill Climbing, A* 							
	(Knowledge Representation) : Introduction to Knowledge representation, Agent							
	(Knowledge Representation) : Forwards and Backward Chaining							
	(Knowledge Representation) : Uncertainty of Bayes' theorem							
	 (Machine Learning/JST) : Introduction to Supervised, Unsupervised and Reinforcement Learning, Perceptron + examples of perceptron applications, Deep Learning 							
	(Machine Learning/JST): Decision Tree							
	Machine Learning/ANN): Evolutionary Algorithm Genetic Algorithm							
	(NLP) : Introduction							
References	Main :							





	1.									
	Supporters:									
	1. Harris C, Mic	hael, 2011, Artificial Intellige	ا nce, Marshall Cavendish B	enchmark						
	2. Norvig, Peter	r, 2014, Paradigms of Artificia	al Intelligence Programmin	ng: Case Stud	lies in Common Lisp.					
	3. Joshi, Pratee	k , 2017, Artificial Intelligence	e with Python Second Edit	ion, Packt Pu	ublishing Ltd.					
Instructional	Software :		н	lardware :						
Media				`amputars/I	antana					
	1. VisualCode			.omputers/L	aptops					
	2. Excel									
	3. Pythons									
Nama of	1 Anwin Datuma	va Mahuudi Sumari Ir. ST. M								
Name of Lecturer	I. Arwin Datuma	ya wanyuu Suman, ir., ST, iv	11, Dr., IPIVI, ASEAN ENg.							
	2. Ika Kusumanin	g Putri, S.Kom., MT								
	3. Rizdania, ST., N	ИКот.								
	4. Vipkas Al Hadio	d Firdaus, ST, MT								
Requirements	-									
Course										
Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Indicator	Rating Weight (%)			
(1)	(2)	(3)	(4)	(5)	(6)	(8)	(9)			
1	• Able to	Introduction to Artificial	Form :	1X4X50"	By studying	Accuracy in	1%			
	explain the	Intelligence, definitions,	Studying		artificial	finding				
	basic	reasons for learning,	- Online (<i>online)</i> (2x50')		intelligence	examples of the				
	concepts	artificial intelligence	Sync → Vcon		introduction	implementation				





	of artificial intelligence and understand how to solve problems based on artificial intelligence (C2) techniques	applications, installing python, refreshing digital theory	Learning methods: Discussion, Problem Based Learning (PBL) Assignment: Task 1 : Looking for examples of implementing artificial intelligence in everyday life and installing python (2x50') Offline		 materials students can: 1. Explain the concept of artificial intelligence 2. Give examples of the implementation of artificial intelligence in everyday life. 3. Installing the Python programming language for artificial intelligence application development tools 	of artificial intelligence in everyday life • Accuracy in installing python as a tool in learning	
2	 Be able to explain the concept of fuzzy reasoning (C2) Be able to explain the difference between fuzzy 	(Reasoning) : Fuzzy- =>Fuzzy tsukamoto, sugeno, mamdani	Form : Studying - Online (online) (2x50') Sync → Vcon Learning methods: discussion Assignment:	1X4X50"	By studying the concept of fuzzy reasoning students can:	 Knowing the concept of fuzzy reasoning. simulating solving a daily problem through a fuzzy reasoning approach 	1%





	tsukamoto, sugeno, mamdani		Parsing again based on the example of the concept of fuzzy reasoning (2x50') <i>Offline</i>		 Explain the concept of fuzzy reasoning Understand the benefits of the concept of fuzzy reasoning Knowing the application of the concept of fuzzy reasoning. 		
3	 Able to apply the concept of fuzzy reasoning (C3) 	(Reasoning) : Fuzzy=> Fuzzy application examples for tsukamoto, sugeno, and mamdani	Form : Studying - Online (<i>online</i>) (2x50') Sync → Vcon Learning methods: Discussion, Problem Based Learning (PBL) Assignment: Case studies of the application of the concept of fuzzy reasoning by Tsukamoto, Sugeno, and Mamdani (2x50') Offline	1X4X50"	By studying the concept of fuzzy reasoning students can: 1. Applying the concept of fuzzy reasoning in solving problems according to case studies using fuzzy tsukamoto, sugeno, and mamdani 2. Applying the concept of fuzzy reasoning	 implementing a fuzzy algorithm as a solution to a problem in python. 	2%





					to the Python programming language			
4	 Be able to explain the search strategy (C2) 	(Problem Solving) : Searching->Breadth-First Search, Depth-First Search, Best-First Search, Hill Climbing, A*	Form : Studying - Online (online) (2x50') Sync → Vcon Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Looking for examples of implementing search strategies and re- describing them based on the examples obtained (2x50') Offline	1X4X50″	By studying search strategy material, students can: 1. Be able to explain the concept of search strategy. 2. Be able to describe the benefits of search strategy. 3. Build solutions to existing problems through the implementation of search strategies.	•	Accuracy describes the search strategy in solving a problem.	1%
5	Material test week 1 to 5	Quiz 1	Quiz 1	1X50"	Quiz 1		Quiz 1	10%
6	 Able to apply search strategy (C3) 	(Problem Solving): examples of Depth-First Search applications, Hill Climbing	Form : Studying - Online (<i>online</i>) (2x50') Sync → Vcon Learning methods: Discussion,	1X4X50"	By studying search strategy material students can: 1. Apply the concept of search strategy in python programming	•	The accuracy of implementing a search strategy as a solution to a problem in Python.	2%





			Problem Based Learning (PBL) Assignment: Task 1 : implement a search strategy as a solution based on everyday problems (2x50') Offline		3. Apply the concept of search strategy in solving problems in everyday life		
7	 Able to explain the concept of knowledge representation and agent (C2) 	(Knowledge Representation) : Introduction to Knowledge representation, Agent	Form : Studying - Online (online) (2x50') Sync → Vcon Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: exemplify and describe the application of knowledge representation & agent (2x50') Offline	1X4X50"	By studying knowledge representation and agent material, students can: 1. Explain again the concept of knowledge representation and agent. 2 Building solutions to existing problems through the application of knowledge representation and agent concepts	 Accuracy in explaining forms of knowledge representation. precision in demonstrating the role of the Agent in the AI concept 	1%
8	Material test week 1 to 8	UTS	UTS	1X50"	UTS	UTS	30%
9	 Be able to explain the concept of 	(Knowledge Representation) :	Form : Studying	1X4X50"	By studying forward and backward chaining	 accuracy in distinguishing the concept of forward 	1%





	f t c e t f t c	Forward and backward chaining (C2) Be able to explain the difference between Forward and backward chaining (C2)	Forwards and Backward Chaining	 Online (online) (2x50') Sync → Vcon Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Looking for examples of the application of knowledge representation and re- describing them based on the examples obtained (2x50') Offline 		material, students can: 1. Explain the concept of forward and backward chaining. 2. Explain the difference between forward and backward chaining concepts 3. Simulating forward and backward chaining processes.	•	and backward chaining. accuracy of simulating forward and backward chaining processes.		
10	• A f k c	Able to apply Forward and backward chaining (C3)	(Knowledge Representation): Examples of Forwards and Backward Chaining applications	Form : Studying - Online (online) (2x50') Sync → Vcon Learning methods: discussion, Problem Based Learning (PBL) Assignment: apply forward and backward chaining algorithms as solutions	1X4X50"	By studying the material for applying forward and backward chaining, students can: 1. Knowing the application of the concept of forward and backward chaining. 2. Applying the concept of forward and backward	•	Implementing the concept of forward and backward chaining in python.	2%	





				to case studies of everyday problems (2x50') <i>Offline</i>		chaining in solving problems based on case studies3. Apply the concept of forward and backward chaining in python programming.			
11	•	Be able to explain the concept of bayes theory (C2) Be able to solve the problem of a case study using Bayes' theory (C3)	(Knowledge Representation) : uncertainty of Bayes' theorem + example application of uncertainty of Bayes' theorem	Form : Studying - Online (online) (2x50') Sync → Vcon Learning methods: discussion, Problem Based Learning (PBL) Assignment: apply Bayes' theory in a case study (2x50') Offline	1X4X50"	By studying Bayesian theory material, students can: 1. Explain the concept of Bayes' theory. 2. Applying Bayes' theory in solving problems. 3. Apply Bayes theory in Python programming.	•	describes the bayes theory approach in everyday life. Simulating the process of Bayes theory in calculations. Applying bayes theory in python for everyday problem solving.	2%
12	•	Able to explain the concept of ANN (C2) Be able to explain the concept of perceptron	(Machine Learning/JST) : Introduction to Supervised, Unsupervised and Reinforcement Learning, Perceptron + examples of perceptron applications, deep learning	Form : Studying - Online (<i>online</i>) (2x50') Sync → Vcon Learning methods: <i>discussion</i>	1X4X50"	By studying ANN theoretical material, students can: 1. explain the concept of ANN theory.	•	accuracy in describing the perceptron algorithm in the form of calculations for the OR / AND case	2%





	 Be able to describe the perceptron algorithm in the form of calculations for the OR/AND(C3) case 		Assignment: perceptron algorithm in the form of calculations for the OR/AND case (2x50') <i>Offline</i>		 Explain the Perceptron theory Describe the perceptron algorithm in the form of calculations for the OR / AND case Applying the perceptron algorithm in python programming. 		
13	Material test week 9 to 12	Quiz 2	Quiz 2	1X50"	Quiz 2	Quiz 2	10%
14	 Be able to explain the concept of decision tree (C2) Be able to describe the perceptron algorithm in the form of calculations for a case study (C3) 	(Machine Learning/JST): Decision Tree + Example of a Decision Tree application	Form : Studying - Online (<i>online</i>) (2x50') Sync → Vcon , discussion Learning methods: discussion Problem Based Learning (PBL) Assignment: Re-describe based on an example of implementing a	1X4X50"	By studying decision tree theory material, students can: 1. Explain the concept of decision tree theory. 2. Apply decision tree theory in solving problems. 3. Applying decision tree theory in python programming.	 describes the decision tree theory approach in everyday life. Simulating the process of decision tree theory. Applying decision tree theory in python for solving everyday problems. 	2%





				decision tree algorithm				
				for a case study				
				(2xEO') Offling				
				(2x30) 0))				
15	•	Be able to	Machine Learning/ANN):	Form :	1X4X50"	By studying	 describes the 	2%
		explain the	Evolutionary Algorithm	Studying		genetic algorithm	approach of	
		concept of	Genetic Algorithm +	- Online (<i>online)</i> (2x50')		material, students	genetic algorithm	
		genetic	Practicum	Sync $ ightarrow$ Vcon ,		can:	theory in everyday	
		algorithm (C2)		discussion			life.	
						1. Explain the		
	•	Able to apply				concept of genetic	Simulate the	
		genetic		Learning methods:		algorithm theory.	genetic algorithm	
		algorithm (C3)		Discussion		2. Explain the	process.	
						benefits of genetic	Applying genetic	
						algorithm theory	algorithm theory in	
				Assignment:		algorithm theory.	nython for	
				Looking for examples of		3. Applying genetic	everyday problem	
				implementation of		algorithm theory	solving	
				Genetic algorithms		in solving	Solving.	
				(2x50') Offline		problems.		
						4. Applying genetic		
						algorithm theory		
						in python		
						programming.		
16	•	Able to give	(NLP) : Introduction	Form :	1X4X50"	By studying	Describe the	1%
		examples of the		Studying		Natural language	benefits of NLP	
		application of		- Online (<i>online)</i> (2x50')		processing	concepts in	
		NLP(C2)		Sync $ ightarrow$ Vcon ,		material, students	everyday life.	
		Po oblo to		discussion		can:	Montion ovamplas	
		ovelain the				1 Evolain the basis	• Wendon examples	
		explain the					or the use of NLP	
		basic concepts		Learning methods:		concept of Natural		
		OT NLP(CZ)		Discussion			everyday life.	





					language		
			Assignment:		processing.		
			Looking for examples of				
			NLP implementations				
			(2x50') <i>Offline</i>				
17	Material test week	UAS	UAS	1X50"	UAS-	UAS	30%
	1 to 16						

Information :

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Web Design & Programming



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATION TECHNOLOGY

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) /	SEMESTER	DATE. PREPARATION
			hour		
Web Design And	RTI213004	Core Informatics	3 credits/ 6 hours	2	August 30, 2021
Programming					
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI	·
	Elok Nurhamdana,	ST, MT	Үорру	Imam Fahru	r Rozi, ST., MT.
	Annisa Taufika Fird	ausi, ST., MT.	Yunhasnawa, S.ST.,		
	Milyun Ni'ma Shou	mi, S.Kom., M.Kom	M.Sc.		
	Farid Angga Pribadi	, S.Kom., M.Kom			
	Rizky Ardiansyah, S	. Kom., MT.			
	Wilda Imama Sabill	a, S.Kom., M.Kom			
Learning Achievement (CP)	Learning Outcomes	s of Study Program Graduates	s (CPL-Prodi)		
				J	
	S8 Internalize ac	ademic values, norms, and et	hics.		
	S9 Demonstrate	a responsible attitude toward	is work in the field of ϵ	expertise indep	pendently.
	PP2 Mastering ICT	product development metho	ods to provide the right	t solutions thre	ough one or more application domains.
	KK1 Able to apply	applied mathematics, compu	tational knowledge (A	lgorithms, Pro	gramming and Databases), engineering science,
	and engineer	ing principles in the fields of s	oftware development	(desktop, web	and mobile), computer networks and other ICT /
	science and to	echnology fields (vision - grap	hics, embedded, Inforr	mation System	ns, Intelligent systems, Business Intelligence, etc).
	KU1 Able to apply	logical, critical, innovative, qu	ality, and measurable	thinking in car	rrying out specific work in their field of expertise
	and in accord	ance with work competency s	tandards in the field c	oncerned.	
	KU2 Able to demo	nstrate independent, quality	and measurable perfor	rmance.	





Learning Outcomes Graduates charged to courses (CPL-MK)

Able to create attractive interface designs to provide the right solutions through website-based application domains ; Able to distinguish static web and dynamic web; Able to distinguish dynamic applications on the user side and server side; Able to create applications using PHP, MySQL Database, jQuery and AJAX with full responsibility and ethics , and apply logical and innovative thinking . Graduate Learning Outcomes that are charged to courses (CPL-MK Sub)

- Students can explain the concept of a working website and the concept of HTML (C2)
- Students distinguish static web and dynamic web on the server side and on the client side (C2)
- Students can apply HTML Concepts on Static Web (C3)
- Students can explain the concept of CSS on Static Web (C3)
- Students can explain Java Script concepts and apply them to Static Web (C2, C3)
- Students can explain the concept of JQuery and apply it to a Static Web (C2, C3)
- Students can explain web-based programming concepts and various Web server software (C2)
- Students can explain PHP concepts and apply them to Dynamic Web (C2, C3)
- Students can explain the concept of web-based programming (C2)
- Students can give examples of various Web server software (C2)
- Students are able to create case studies (C6)
- Students can explain Form Processing and Upload Form concepts and applying them to the Dynamic Web (C2, C3)
- Students can explain the concept of Database Web Programming using PHP and MySql and apply it to the Dynamic Web (C2, C3)
- Students can explain the concepts of Login, Multiuser Login and reports, and apply them to the Dynamic Web (C2, C3)
- Students can explain the concepts of Cookies, Session and Mysql and apply them to the Dynamic Web (C2, C3)
- Students can explain the concept of Bootstrap and apply it to the Dynamic Web (C2, C3)
- Students can explain the concept of Web Hosting and apply it to Dynamic Web (C2, C3)





	- Students can explain Web design and programming concepts and apply them to Dynamic Web (C2, C3) (C2)
Short Course Descriptions	In this Web Design and Programming course, HTML, CSS, Javascript, Jquery will be discussed, the differences between static web and dynamic web, dynamic Web on the client side and on the server side, Introduction to Web Servers, Web programming languages (PHP), Databases related to Web programming (MySQL), Middleware Connection to Database, JQuery, AJAX
Learning Materials / Subjects	12. Introduction to the Internet and Web Design
	13. HTML
	14. CSS
	15. Java Script
	16. JQuery
	17. PHP Programming Fundamentals
	18. Form Processing and Form Upload
	19. Cookies, Sessions and MySQL
	20. Database Programming in PHP
	21. Multiuser Login and Reports
	22. Datatables
	23. AJAX
	24. Bootstrap
	25. Web Hosting
References	Main :
	7. Jason Beaird, The principles of Beautiful Web Design
	8. Rian Ariona, Learn HTML and CSS (Fundamental Tutorial on learning HTML and CSS)
	9. Adi Hadisaputra, HTML and CSS Fundamentals from Roots to Leaves





	10. John Duckett,HTML and CS	SS design and build websites
	11. Glenn Johnson, Programm	ing in HTML 5 with Javascript and CSS 3
	12. Desrizal, Javascript Guide	
	13. Tutorials Point Simply Easy	y Learning, Java Script Language
	14. Jonathan Caffer and Karl S Script Techniques)	wedberg, Learning Jquery 1.3 (Better Interaction Design and Web development with simple Jawa
	15. Andre Pratama, PHP Unco	ver – PHP Learning Guide for beginners
	16. Endy Muhardin, PHP Progr	ramming Fundamentals and MySql Fundamentals
	17. Bootstrap Tutorial (Simply	Easy Learning by Tutorials.com)
	Supporters:	
	3. Desrizal, Complete guide t	o PHP AJAX JQuery
	4. Ciebal. Basic Internet Tuto	rial for beginners
	5 ABD Hama Indonesian Lau	nguage Bootstran Framework Tutorial
Instructional Media	Software :	Hardware :
	SOFTWARE :OS - WINDOWS,	Laptops, LCDs and Projectors
	WEB BROWSER, XAMPP Web	
	Server, Visual Code editor and	
	text editor (Notepad++)	
Name of Lecturer	Elok Nurhamdana. ST. MT	
	Annisa Taufika Firdausi, ST., MT.	
	Milvun Ni'ma Shoumi, S.Kom., M.K	Kom
	Farid Angga Pribadi, S.Kom., M.Ko	m
	Rizky Ardiansvah, S. Kom., MT	
	Wilda Imama Sabilla, S.Kom., M.Ko	om
Requirements Course	-	





M in g gu Ke	Planned Final Capability (Sub- CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students can explain the concept of a working website and the concept of HTML (C2) Students distinguish static web and dynamic web (C2) Students can distinguish dynamic web on the server side and on the client side (C2) Students can apply HTML Concepts on Static Web (C3) 	 Web basic concept Great Web Design Web architecture HTTP Client side programming Server side programming Server side programming Web server software Introduction to HTML Creating Images Create Links Heading / Title Make a List / List Understanding DIV Tags Forms Table Web Programming Case study 	Form : Practice Learning methods: Self Direct Learning (SLD) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 1 : Working on Jobsheet 1	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	By studying Web design and programming materials , students can: • Static web creation exercise	 Question and answer Practice 	 Ability to understand how to Implement HTML Concepts on Static Web 	2%
2	 Students can explain the concept of CSS Students can (C2) applying CSS Concepts on Static Web (C3) 	 Definition of CSS Box Models Grids FlexBox Case study 	Form : Practice Learning methods:	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50')	 Static web styling exercise 	 Question and answer Practice 	 Ability to understand how to Implement CSS 	2%





			Role Play & Simulation Learning Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 2 : Work on Jobsheet 2	Asynchronous → learning videos - Practicum Jobsheet (4 x50')	•	Tasks based on case studies.				Concepts on Static Web		
3	 Students can explain the concept of CSS (C2) Students can applying CSS Concepts on Static Web (C3) 	 Fonts Background Color Responsive Web Case study 	Form : Practice Learning methods: Role Play & Simulation Learning, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 3 :	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	•	Static web styling exercise Tasks based on case studies.	•	Question and answer Practice	•	Ability to understand how to Implement CSS Concepts on Static Web	2%	





			Working on Jobsheet 3, where there is a case study of applying CSS to a static website									
4	 Students can explain the concept of Java Script (C2) Students can implementing Java Script Concepts on Static Web (C3) 	 Introduction to Java Script Event Handling Strings object Window object Date and Time Variables Data Type table 	Form : Practice Learning methods: Role Play & Simulation Learning, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 4 : Working on Jobsheet 4, where there is a case study of implementing Javascript on a static web	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	•	Exercise Tasks based on case studies	•	Question and answer Practice	•	Ability to understand how to Implement Java Script Concepts on Static Web	2%	





5	 Students can explain the concept of Java Script (C2) Students can implementing Java Script Concepts on Static Web (C3) 	 Arrays Looping Condition Form validation maps 	Form : Practice Learning methods: Role Play & Simulation Learning, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 5 : Working on Jobsheet 5, where there is a case study of implementing Javascript on a static web	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	 Exercise Tasks based on case studies 	 Question and answer Practice 	 Ability to understand how to Implement Java Script Concepts on Static Web 	2%
6	 Students can explain the concept of JQuery (C2) Students can implementing JQuery Concepts on Static Web (C3) 	 Jquery Usage and Development Jquery Basics Event Handling in Jquery 	Form : Practice Learning methods:	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50')	 Exercise Tasks based on case studies 	 Question and answer Practice 	 Ability to understand how to Implement JQuery 	2%




Creating Slide Self-Direct Asynchronous			•	Creating Slide	Self-Direct	Asynchronous			Concepts on		1
JqueryJqueryJake Play & SimulationJake Play & SimulationVideosJqueryJqueryAcke Play & Simulation· Practicum Jobsheet (4 x50')· Practicum Jobsheet (4 x50')· Practicum Jobsheet (4 x50')· Practicum · Pract	 Stucor Stuvar Stucor Stucor	 Students car concept of w programmin Students car various type software (C2 Students car concept of P Students car Concepts on (C3) 	can explain the of web-based ming (C2) can explain ypes of Web server (C2) can explain the of PHP (C2) can applying PHP s on Dynamic Web	Shows with Jquery Introduction to Web Servers PHP Introduction PHP variables PHP Data Types PHP strings	Learning, Role Play & Simulation Learning Learning Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 6 : Working on Jobsheet 6 Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation Learning Learning Resources: E-learning Imsslc.polinema .ac.id	 → learning videos - Practicum Jobsheet (4 x50') 1 x 5 x 50 ' - Online (Online) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50') 	 Exercise Tasks based on case studies 	 Question and answer Practice 	 Ability to understand how to apply PHP concepts on a dynamic website 	2%	





0	- Students con eveloin the		Assignment: Task 7 : Working on Jobsheet 7	1 × 5 × 50 '			a Ability to	29/	
o	 Students can explain the concept of web-based programming (C2) Students can give examples of various Web server software (C2) Students can explain the concept of PHP (C2) Students can applying PHP Concepts on Dynamic Web (C3) 	Looping and Branching Structures	Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation Learning Learning Learning Imsslc.polinema .ac.id Assignment: Task 8 : Working on Jobsheet 8	- Online (Online) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	 Exercise Tasks based on case studies 	 Question and answer Practice 	 Ability to understand how to apply PHP concepts on a dynamic website 	2%	
9	• Students are able to create case studies (C6)	 HTML CSS Java Script Jquery PHP 	Form : Practice Learning methods: Problem Based Learning (PBL)	1 x 5 x 50 '			 Ability to understand how to apply HTML, CSS, Java Script, PHP Concepts on 	20 %	





			Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 8 : Implement case studies by utilizing HTML, CSS, Javascript, JQuery, and PHP				Static Web and Dynamic Web		
10	 Students can explain the concept of web-based programming (C2) Students can give examples of various Web server software (C2) Students can explain the concept of PHP (C2) Students can applying PHP Concepts on Dynamic Web (C3) 	 Arrays in PHP Functions in PHP Strings date and time 	Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation Learning Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 10 :	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	 Exercise Tasks based on case studies 	 Question and answer Practice 	 Ability to understand how to apply PHP concepts on a dynamic website 	2%	





			Work on Jobsheet 10									
11	 Students can explain the concepts of Form Processing and Form Upload (C2) Students can apply the Concept of Form Processing and Form Upload on Dynamic Web (C3) 	 Basic Form Handling Form Input type text and Password Form Validation with isset() function and header redirect Form Input type Radio Form Input Checkbox Form Input ComboBox Form Input ComboBox Form Validation using Regular Expression Form Input type Text Area Move upload file Validation for Uploaded files that have the same name Limit Upload File Size Limit Upload File Types 	Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation Learning Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 11 : Working on Jobsheet 11	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	•	Exercise Tasks based on case studies	•	Question and answer Practice	•	Ability to understand how to apply Form Concepts to a dynamic Web	2%	





12	 Students can explain the concept of Web Database Programming using PHP and MySql (C2) Students can implementing Web Database Programming Concepts using PHP and MySql on the Dynamic Web (C3) 	 create Updates Delete Database Connection 	Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation, Learning Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 12 : Working on Jobsheet 12, where there is a case study of implementing CRUD using PHP and MySQL	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos - Practicum Jobsheet (4 x50')	Exercises and Assignments based on case studies	 Question and answer Practice 	 Ability to understand how to apply Web Database Programming Concepts using PHP and MySql on a dynamic Web 	2%
13	Students can explain the concept of Login, Multivor Login and	 Login Multiuser Login 	Form : Practice	1 x 5 x 50 '	Exercises and Assignments	Question and answer	Ability to understand how to apply	2%
	reports (C2)	ReportSessions	Learning methods:	- Online (<i>Online</i>) (1x50')	based on case studies	Practice	login concepts, multiuser login	





	 Students can apply the Concept of Login, Multiuser Login and report on Dynamic Web (C3) Students can explain the concept of Cookies, Session and Mysql (C2) Students can applying the Concept of Cookies, session and Mysql on Dynamic Web (C3) 	 Cookies mysql 	Self-Direct Learning, Role Play & Simulation Learning, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 13 : Working on Jobsheet 13, where there are case studies on the implementation of Cookies, Session and Multiuser Login	Asynchronous → learning videos - Practicum Jobsheet (4 x50')			and reports on dynamic Web		
14	 Students can explain the concept of Bootstrap (C2) Students can implementing Bootstrap Concepts on Dynamic Web (C3) 	• Bootstrap	Form : Practice Learning methods: Self-Direct Learning,	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos	ExerciseTask	 Question and answer Practice 	 Boostrap 's Concepts to a dynamic Web 	2%	





			Role Play & Simulation Learning, Problem Based Learning (PBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 14 : Working on Jobsheet 14, where there is a case study of implementing Bootstrap on the Dynamic Web	- Practicum Jobsheet (4 x50')					
15	 Students can explain the concept of Web Hosting (C2) Students can applying the Concept of Web Hosting on a Dynamic Web (C3) 	Web Hosting	Form : Practice Learning methods: Self-Direct Learning, Role Play & Simulation Learning, Problem Based Learning (PBL)	1 x 5 x 50 ' - Online (<i>Online</i>) (1x50') Asynchronous → learning videos	 Exercise Task 	 Question and answer Practice • 	 Web Hosting Concepts on a dynamic Web 	2%	





			Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Task 15 : Working on Jobsheet 15, where there is a case study of implementing Web Hosting on a Dynamic Web	- Practicum Jobsheet (4 x50')						
16	 Students can explain the concept of Web design and Programming (C2) Students can apply Web Design and Programming Concepts on Dynamic Web (C3) 	• FinalProject	Form : Practice Learning methods: Project Based Learning (PjBL) Learning Resources: E-learning Imsslc.polinema .ac.id Assignment: Big Tasks :	1 x 5 x 50 '	 Qua and Pre 	estion d answer esentation	•	Ability to understand how to apply Web Design and Programming Concepts to a dynamic Web	22%	-





			Working on the Final Project					
17	UAS	 HTML CSS Java Script PHP PHPMysql Bootstrap Web hosting 	Online examsHosting	1 x 5 x 50 '	UAS	UAS	U A S	30 %





Advanced Database



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM: D 4 INFORMATICS ENGINEERING

		SEMESTER LEARNING PLAN (RPS)									
SUBJECT	CODE	COURSE CULTURE	WEIGHT (SKS)/hour	SEMESTER	DATE. PREPARATION						
ADVANCED DATABASE	RTI 21 3005	Core Informatics	2 credits/ 4 hours	5	August 30, 2021						
AUTHORIZATION	RPS Developer Le	cturer	MMK Coordinator	Ka PRODI							
	Yoppy Yunhasnaw Rokhimatul Wakh Dwi Puspitasari, S Annisa Puspa K, S Dika Rizky Yunian Irsyad Arif Mashu	va, S.ST., M.Sc. idah, S.Pd, MT .Kom., M.Kom. .Kom., M.Kom. to, S.Kom., M.Kom di, S.Kom., M.Kom.	Yoppy Yunhasnawa, S. Kom. M. Eng.	Imam Fahrur Rozi, ST, MT							
Learning Achievement (CP)	Learning Outcom S8 Internalize a S9 Demonstrat PP2 Mastering IC KK1 Able to appl and enginee science and KU1 Able to appl and in accor	es of Study Program Grad academic values, norms, ar e a responsible attitude to CT product development m ly applied mathematics, co ering principles in the fields technology fields (vision - ly logical, critical, innovativ dance with work compete	uates (CPL-Prodi) ad ethics. wards work in the field of e bethods to provide the righ mputational knowledge (A s of software development graphics, embedded, Inform e, quality, and measurable ncy standards in the field c	expertise indepe t solutions throu lgorithms, Progr (desktop, web a mation Systems, thinking in carr oncerned.	endently. ugh one or more application domains. ramming and Databases), engineering science, and mobile), computer networks and other ICT / , Intelligent systems, Business Intelligence, etc). ying out specific work in their field of expertise						





	Learning Outcomes Graduates charged to courses (CPL-MK)
	Understand Transact SQL - Select, Data Type, Built In Function, Sub Query, Table Expression (View, Scalar Function, Inline Table Value
	Function, Derived Table, Common Table Expression), Set Operator, Window Rank, Pivoting, Stored Procedure, Programming, Error
	Handling, Rollback, Commit, Final Database Project.
Short Course Descriptions	Advanced Database is a course that is expected to provide knowledge and skills in managing data in an enterprise relational DBMS. This
	knowledge and skills cover complex query techniques and database administration procedures.
Learning Materials / Subjects	- Re View Database, Introduction to SMBD, Installation and Configuration of Microsoft SQL Server .
	- Introduction to Transact-SQL and the SELECT Statement.
	- Join, sort, and filter data.
	- Data types, and Built-in Functions
	- Subqueries, Grouping, and Aggregating
	- Table Expressions
	- Set and Trigger Operations
	- SQL Window ing: Function, Rank, Offset, & Aggregate
	- Pivot and Grouping Sets
	- Queries against Metadata
	- Stored Procedures and dynamic SQL
	- Programming in T-SQL and error handling
	- Introduction to NoSQL
	- NoSQL implementation case studies
	- Case study of T-SQL querying
References	Main :
	Microsoft Proce Quanting Microsoft® SQL Server ® 2012, 2012
	Microsoft Press, Querying Microsoft ' SQL Server ' 2012, 2012
	Supporters:
	Supporters.
	1. Microsoft Press, Administering Microsoft [®] SQL Server [®] 2012, 2012
Instructional Media	Software : Hardware :





			 8. Microsoft SQ Server 2012(minimun 9. Microsoft SQ Server Express 2016 a above (recommended 10. Microsoft SQ Server Management Studio (SSMS) 	L PCs/Laptops n). L ind d) L					
Name of Lecturer1.Dwi Puspitasari, S.Kom., 2.2.Dika Rizky Yunianto, S.Ko 3.Yoppy Yunhasnawa, S.ST 4.4.Annisa Puspa Kirana., S. H 5.Rokhimatul Wakhidah, S. 6.5.Rokhimatul Wakhidah, S. 6.Yery Sugiarto, S.Pd 7.7.Galih Putra Riatma, S.ST.				m., M.Kom. S.Kom, M.Kom S.ST., M.Sc. S. Kom, M. Kom n, S.Pd, MT ST.					
Requirer	nents Course								
Week	Planned Final Capab (Sub-CP-MK)	ility	Study material (Learning materials)	Learning Forms and Methods	Estimat ed time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students are able install Microsoft S Server , Management Stud (SSMS) and conne with SQL Server (C Students explain to 	to GQL dio ect it C1) the	 Installing Microsoft SQL Server . Install Microsoft SQL Server Management Studio. 	Form : e.Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video.	4 X 50"	By studying the SMBD Introduction material students can: - Understand database concepts - Perform the	Criteria: Precision and mastery Form of assessment: - Presentation	Able to understand the concept of <i>enterprise DBMS</i> and its various advantages.	2.86%





 intent and purpose of SQL Server services on Windows . (C2) Students explain the concept of database objects on SQL Server through the SSMS window. (C2) Students explain the difference between database servers and database tools (GUI). (C2) Students are able to execute Transact-SQL (T-SQL) scripts via SSMS. (C3) 	 Exploring SQL Server services and enabling/disablin g them through SQL Server Configuration Manager. Connect to the database server via SSMS. database objects through the SSMS window. Execute SQL scripts via the SSMS query window . 	 f. Studying Online (Online) (1x50') Sync → Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Practice questions on theory and discussion Practicum and practicum job sheet work (2x50') 		process of installing and configuring Microsoft SQL Server - Understand the difference between database servers and database tools (GUI). - Execute Transact- SQL (T-SQL) scripts through SSMS.	 Active group discussion includes asking and answering (affective) <i>job sheet</i> assignments 			
explain the basic differences between	scripts that have been previously	a. Studying Online (4 \ 50	SMBD Introduction	Precision and mastery	the concept of programmable-SQL	2.00/0	1





Transact-SQL (T-SQL)	stored in a file	Online)	material students		and the use of	
and ANSI SQL. (C2)	-Observe and	(1x50')	can:	Form of	SELECT statements	
- Students are able to	change <i>the</i>	Asynchronou		assessment:		
explain how to create	database context.	$s \rightarrow \text{Learning}$	- Understand the	- Presentation		
 a database from an existing SQL file (C2) Students can execute part or all of the SQL script from an existing file. (C3) Students are able to explain and apply the concept of ' database context' and how to 	-Make comments (comments) on T- SQL -Analyze a table with the help of a SELECT statement. -Display data	video b. Studying Online (Online) (1x50') Sync → Submission of material online and online discussion	 bolicerstand the basic differences between Transact-SQL (T-SQL) and ANSI SQL. Understand how to create a database from an existing SQL file Understand how 	 Active group discussion includes asking and answering (affective) job sheet assignments 		
 adjust it. (C2) (C3) Students are able to apply the concept of using 'comments' in T- SQL . (C3) Students are able to apply the concept of using the SELECT statement to analyze existing tables in <i>the</i> <i>database</i> . (C3) Students are able to apply how to display data in an orderly manner 	-Create aliases for table names and column names -Create a branch with CASE.	Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work	 to execute part or all of SQL scripts from existing files. Understand the concept of ' database context' and how to customize it. Understand the concept of using 'comments' in T- SQL. Understand the concept of using a SELECT 			





	 unique/distinct . (C3) Students are able to apply how to use aliases for table names and column names. (C3) Students are able to apply the concept of CASE expressions and how to use them. (C3) 		(2x50')		 statement to analyze existing tables in the database. Understand how to display data <i>uniquely/distinct</i>. Understand how to use aliases for table names and column names. Understand the concept of CASE expressions and how to use them. 				
3	 Students are able to explain and apply how to query multi-tables in the SELECT clause using JOIN (C2)(C3) Students are able to apply how to write INNER JOIN queries (C3) Students are able to apply how to write OUTER JOIN queries (C3) 	-query with JOIN -INNER JOIN -OUTER JOINS -SELF JOIN and CROSS JOIN -sort (sorting) data -Filter data with WHERE -Partial data	Form : a.Studying Online ($Online$) (1x50') Asynchronous \rightarrow Learning video b.Studying Online (Online) (1x50') Sync \rightarrow	4 X 50"	 By studying the SMBD Introduction material students can: Understand how to query multi- tables in a SELECT clause using JOIN Understand how to write INNER JOIN queries 	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and answering (affective)	Understand the concept and be able to perform JOIN, Sorting and Filtering operations on data in the database.	2.86%	





	 Students are able to apply how to write SELF-JOIN and CROSS JOIN queries (C3) Students are able to apply how to do Data Sorting (C3) Students are able to apply how to do Data Filtering with predicates (C3) Students are able to explain and apply how to do Data Filtering with TOP and OFFSET- FETCH (C2)(C3) Students are able to explain how to handle missing and unknown values in real data. (C3) 	retrieval with TOP and OFFSET- FETCH -NULL and its handling	Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')		 Understand how to write OUTER JOIN queries Understand how to write SELF- JOIN and CROSS JOIN queries Understand how to sort data Students understand how to do Data Filtering with predicates Understand how to do Data Filtering with predicates Understand how to do Data Filtering with TOP and OFFSET- FETCH Understand how to perform Missing and unknown value handling on real data. 	job sheet assignments			
4	 Students can explain data types in SQL Server (C2) Students can explain queries against data 	 Convert data types with CAST and CONVERT 	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous	4 X 50"	By studying the SMBD Introduction material students can:	Criteria: Precision and mastery	Students understand the use of some important built-in SQL <i>Server</i>	2.86%	





 (C2) Students can explain built-in functions related to Date & Time (C2) Students can explain character data types Concatenation of character data types with non-characters (C2) Students can explain built-in functions related to character data types (C5) 	 Replace NOLL with <i>ISNULL</i> and COALESCE Convert date- time data type with CONVERT & TRYPARSE IF logic function Row grouping with CHOOSE. The LEN function on strings 	video. b.Studying Online (Online) (1x50') Sync → Submission of material online and online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')		 Understanding data types in SQL Server Understand Queries against Date & Time data types Understanding Built-in Functions related to Date & Time Understanding Character data types Concatenation of character data types with non- characters Understand the built-in functions related to character data types 	assessment: - Presentation - Active group discussion includes asking and answering (affective) job sheet assignments	to use them.		
---	---	---	--	--	---	--------------	--	--





5	- Students can explain	-Definition of	Form :	4 X 50"	By studying the	Criteria:	Students	2.86%
	how to write queries	aggregation and	a. Studying		SMBD Introduction	Precision and	understand	
	which summarizes	aggregation	Online (<i>Online</i>		material students	mastery	concepts, are able	
	data using <i>built-in</i>	function) (1x50')		can:		to create and use	
	aggregation functions	C	Asynchronous			Form of	sub-queries, are	
	(C2)	-Groups	\rightarrow Learning		- Understand how	assessment:	able to classify data	
		values with	video.		to write queries	- Presentation	into groups, and are	
	- Students can explain	GROUP BY			that summarize	A	able to aggregate	
	and apply now to use	-Filter groups	b. Studying		data using built-in	- Active group	data.	
	the GROUP BY clause	of values by	Online (aggregation	discussion		
	coveral groups (C2)(C2)	HAVING	Online)		functions	acking and		
		0	(1x50')		- Understand how	asking and		
	- Students can explain	-Queries	Sync →		to use the GROUP	(affective)		
	and apply how to use	within Queries	Submission of		BY clause to	(uncenve)		
	the HAVING clause to	-Sub- Query	material		organize rows	job sheet		
	filter data according to	Self-contained vs	online and		into groups	assignments		
	search conditions (C2)	Correlated	online		5 1			
	(C3)	The cub	discussion		- Understand how			
	- Students are able to	-The sub-			to use the			
	apply the intent and	and multivalued			HAVING clause to			
	use of queries nested				filter data			
	in another <i>query</i> (C3)	 Checks for the 	Learning		according to			
		existence of a	methods:		search conditions			
	- Students explain how	value in the sub-	Contextual		- Understand the			
	to write a <i>self</i> -	<i>query</i> with the	Teachina and		intent and use of			
	contained sub-query	EXISTS predicate	Learning (CTL)		queries that are			
	that returns scalar or		5, , ,		nested within			
			Assignment:		other queries			
	(22)		- Practice		- Understand how			
	- Students are able to		questions on		to write self-			
	apply how to write		theory and		contained sub-			
	correlated sub-		discussion		queries that			
	queries and return		- Practicum and					





	 scalar or multi-valued results (C3) Students are able to apply how to use the EXISTS predicate to efficiently check the existence of a row in a sub-query (C3) 		practicum job sheet work (2x50')		return scalar or multi-valued results - Understand how to write correlated sub- queries that return scalar or multi-valued results Students understand how to use the EXISTS predicate to efficiently check for the existence of a row in a sub- query				
6	 Students are able to define the meaning of <i>table expressions</i>. (C2) Students are able to explain concepts and are able to make <i>a</i> <i>VIEW</i> (C2) (C3) Students are able to explain concepts and be able to derive tables (C2) (C3) 	-Table expressions and their types -Derived Table -Common Table Expressions (CTE) -Inline Table Valued Functions (TVF)	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b.Studying Online (<i>Online</i>) (1x50') Sync →	4 X 50"	 By studying the SMBD Introduction material students can: Be able to define the meaning of <i>table expressions</i> Understand the concept and be able to create a 	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and	Students can type table expressions and be able to make and use them.	2.86%	





	 Students are able to explain concepts and are able to make common table- expressions (CTE) (C2)(C3) Students are able to explain concepts and be able to make inline table-valued functions (TVF) (C2)(C3) 		Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')		 VIEW Understand the concept and be able to derive tables Understand the concept and be able to create a common table-expression (CTE) Understand the concept and be able to create an inline table-valued function (TVF) 	answering (affective) <i>job sheet</i> assignments			
7	 Students are able to explain the purpose of Set Operations (C2) Students are able to apply and explain the differences between UNION & UNION ALL (C2)(C3) Students are able to 	-Types of Set Operations -Merge data with UNION & UNION ALL -Apply a function to each member of the set with CROSS	Form : a. Studying Online (Online) (1x50') Asynchronous → Learning video. b. Studying Online (4 X 50"	By studying the SMBD Introduction material students can: - Understand the meaning of Set Operations - Able to utilize,	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion	Students understand the concept and are able to perform set operations and create TRIGGER.	2.86%	





				in almals :	,	
apply and explain the	APPLY & OUTER	Unine)	and understand	includes		
differences between	APPLY	(1x50')	the difference	asking and		
CROSS APPLY &	Data clicas	Sync $ ightarrow$	between UNION	answering		
OUTER APPLY (C3)(C2)		Submission of	& UNION ALL	(affective)		
 OUTER APPLY (C3)(C2) Students are able to apply, and explain the differences EXCEPT & INTERSECT (C2)(C3) Students explain the meaning of TRIGGER (C2) Students explain the difference between TRIGGER AFTER & TRIGGER INSTEAD OF (C2) Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) (C3) Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) (C3) 	-Data slices with EXCEPT & INTERSECT -TRIGGER and its types -Create and Execute TRIGGER -TRIGGER AFTER -TRIGGER INSTEAD OF	Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')	 & UNION ALL Able to utilize, and understand the difference between CROSS APPLY & OUTER APPLY Able to utilize, and understand the differences EXCEPT & INTERSECT Understand the meaning of TRIGGER Understand the difference between TRIGGER AFTER & TRIGGER INSTEAD OF Able to create and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) 	(affective) job sheet assignments		
			 Able to create 			





8	Written test for week 1 to 8 material	UTS	UTS	4 X 50″	and activate TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) UTS	UTS	UTS	25%
9	 Students are able to explain purpose and benefits of SQL Window ing (C2) Students are able to create windows with OVER clauses (C3) Students are able to partition windows (C3) Students are able to place orders on the window (C3) Students are able to do framing on windows (C3) Students are able to explain the concept of window function . (C2) Students are able to explain and be able to use the aggregation function in window 	-Definition of SQL Window ing -Create a window with OVER -Window partition with PARTITION BY -Ordering window with ORDER BY -Framing windows with ROWS BETWEEN -Aggregation function on window ranking function -Offset function on	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion Learning methods: <i>Contextual</i> <i>Teaching and</i> <i>Learning (CTL)</i>	4 X 50"	 By studying the SMBD Introduction material students can: Understand the purpose and benefits of SQL Window ing Able to create window with OVER clause Able to partition windows Able to do ordering on the window Able to do framing on windows Understand the 	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and answering (affective) job sheet assignments	Students understand the concept of SQL Windowing and are able to use the aggregation, offset , and ranking functions on the window .	2.86%





	 (C2)(C3) Students are able to explain and be able to use the ranking function in window (C2)(C3) Students are able to explain and be able to use the offset function in window (C2)(C3) Students are able to define the meaning of the distribution function on the window . (C2) 	windows -Introduction to distribution functions in windows	Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')		 concept of window functions Understand and be able to use aggregation functions on windows Understand and be able to use the ranking function on the window Understand and be able to use the offset function on the window Be able to define the meaning of the distribution function on the 				
					window .				
10	 Students are able to present data in pivot form using the PIVOT operator (C3) Students are able to change the data format from pivot to normal form with UNPIVOT. (C3) 	-Pivoting typing -Create pivots with the PIVOT operator -Normalize the pivot shape with the UNPIVOT	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (4 X 50"	 By studying the SMBD Introduction material students can: Able to present data in pivot form using the PIVOT operator 	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion	Students are able to display data in the form of pivots and are able to do grouping sets .	2.86%	





 Students are able to combine 2 or more GROUP BY results with different columns and GROUPING SETS. (C3) Students are able to combine 2 or more groups consisting of a combination of all the columns involved with CUBE. (C34) Students are able to combine 2 or more groups consisting of a hierarchy of all columns involved with CUBE. (C3) Students are able to determine the original NULL and placeholder NULL in grouping sets with GROUPING_ID. (C3) 	operator -Combine 2 or more different column groups with GROUPING SETS -Shows combining combinations of all columns in grouping sets with CUBE -Displays the merged hierarchy of all columns in grouping sets with ROLLUP -Differentiate the NULL type in the GROUPING SETS result with GROUPING_ID	Online) (1x50') Sync → Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')	 Able to change data format from pivot to normal form with UNPIVOT. Able to combine 2 or more GROUP BY results in different columns with GROUPING SETS. Able to combine 2 or more groups consisting of a combination of all the columns involved with CUBE. Able to combine 2 or more groups consisting of the hierarchy of all columns involved with CUBE. Be able to specify original NULL and placeholder NULL 	includes asking and answering (affective) <i>job sheet</i> assignments		
			 Be able to specify original NULL and placeholder NULL in grouping sets with 			









 Students are able to explain and apply how to use functions related to date & time data types (C2)(C3) Students are able to explain and apply how to combine 2 or more variables with character and non- character data types (C2)(C3) Students are able to explain how to use functions related to character data types (C2) 	type - Character data type concatenation with non- characters -Built-in functions related to character data types	discussion - Practicum and practicum job sheet work (2x50')		 , table, function, and other objects. Understand the concept and various data types in SQL <i>Server</i> Understand how to <i>query</i> date & time data types Understand how to use functions related to date & time data types Understanding how to combine 2 or more variables with character and non- character data types Understand how to use functions related to data 			
				 Understand how to use functions related to character data types 			
- Students are able to	- Definition of	Form :	4 X 50"	By studying the	Criteria:	Students are able to	2.86%
explain the concept of	Stored Procedures	a. Studying Online (<i>Online</i>		SMBD Introduction	Precision and mastery	create and run	





	stored procedures in	-	Create stored) (1x50')	m	aterial students		stored procedures	
	SQL Server . (C2)		procedures	Asynchronous	са	n:	Form of	and dynamic SQL .	
-	Students are able to	-	Executes stored	\rightarrow Learning			assessment:		
	create a stored		procedures	video.	-	Understand the	- Presentation		
	procedure which in its	-	Parameters in			concept of stored	- Active group		
	definition contains a		stored procedures	b. Studying		procedures in SQL	discussion		
	SELECT statement .	-	Stored procedure	(1)		Server.	includes		
	(C3)		that returns a	$\int (1X50)$	-	Able to create <i>a</i>	asking and		
-	Students are able to		value	Submission of		stored procedure	answering		
	execute a stored	-	Understanding	material		which in its	(affective)		
	procedure . (C3)		dynamic SQL	online and		definition	ich sheet		
-	Students are able to	-	Executes dynamic	online		contains a SELECT	assignments		
	explain how to pass		SQL	discussion		statement .	ussignments		
	parameters to a stored				-	Able to execute a			
	procedure . (C2)			Learning		stored procedure			
-	Students are able to			methods:		•			
	create stored			Contextual	-	Understand how			
	procedures that return			leacning and		to pass			
	results with OUTPUT.			Learning (CTL)		parameters to a			
	(C3)			Assignment.		stored procedure			
-	Students explain the			- Practice		•			
	concept of dynamic			questions on	-	Be able to create			
	SQL (dynamic SQL)			theory and		stored procedures			
	(C2)			discussion		that return			
-	Students are able to			- Practicum and		results with			
	build and run dynamic			practicum <i>job</i>					
	SQL with EXEC and			sheet work	-	Understand the			
	SP_EXECUTESQL. (C3)			(2x50')		concept of			
						dynamic SQL (
						aynamic SQL)			





			_		 Able to build and run dynamic SQL with EXEC and SP_EXECUTESQL. 			
13	 Students are able to explain how to use elements of the T-SQL language in basic programming. (C2) Students are able to explain about BATCH and how to use it in SQL Server . (C2) Students are able to explain how to declare & assign variable values and SYNONYM. (C2) Students are able to explain how to use IF and WHILE blocks in the T-SQL program flow. (C3) Students are able to apply how SQL Server handles errors that appear in T-SQL code. (C3) Students understand how to implement 	 Concept of programming in T-SQL. BATCH SYNONYM Branching with IF and WHILE SQL Servers error handling Exceptions T-SQL error information 	 Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (Online) (1x50') Sync → Submission of material online and online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: Practice 	4 X 50"	 By studying the SMBD Introduction material students Understand how to use elements of the T-SQL language in basic programming. Understand about BATCH and how to use it in SQL Server. Understand how to declare & assign variable values and SYNONYM. Understand how to use IF and WHILE blocks in T-SQL program flow. Understand how sQL Server 	 Criteria: Precision and mastery Form of assessment: Presentation Active group discussion includes asking and answering (affective) job sheet assignments 	Students are able to program with T-SQL and analyze <i>errors</i> in the program code that is made.	2.86%





	 structured exception handling in T-SQL. (C3) Students are able to explain how to get information about errors from the system objects . (C2) 		questions on theory and discussion - Practicum and practicum <i>job</i> <i>sheet work</i> (2x50')		 handles <i>errors</i> that appear in T-SQL code. Understand how to implement structured <i>exception handling in T-SQL</i>. Understand how to get information about <i>errors</i> from <i>the system objects</i>. 				
14	 Students are able to describe NoSQL databases and their varieties (C2) Students describe NoSQL in the startup industry 	 Understanding NoSQL Its application to the startup industry 	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and online discussion	4 X 50"	 By studying the SMBD Introduction material students can: Be able to describe NoSQL databases Able to describe the implementation of NoSQL in the startup industry 	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and answering (affective) job sheet assignments	Students are able to understand the concept of NoSQL and implement it	2.86%	





			Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')					
15	 Students are able to understand the components of queries with good performance (C1) Students are able to display and interpret basic queries (C3) Students are able to display and interpret basic queries for data performance (C3) 	 Students are able to apply NoSQL to one case study example 	Form : a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (<i>Online</i>) (1x50') b. Sync → Submission of material online and	4 X 50"	By studying the SMBD Introduction material students can: - Able to understand the components of <i>the query</i> with good performance - Able to display and interpret basic <i>queries</i> - Able to display and interpret	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and answering (affective) job sheet assignments	Students are able to implement NoSQL in one of the given case studies	2.86%





			online discussion		basic <i>queries</i> for data performance			
			Learning methods: Contextual Teaching and Learning (CTL)					
			Assignment: - Practice questions on theory and discussion - Practicum and practicum job sheet work (2x50')					
16	- Students are able to explain and apply all of the previous topics in certain cases (C2)	- Case Study of T- SQL Querying	Form: a. Studying Online (<i>Online</i>) (1x50') Asynchronous → Learning video. b. Studying Online (<i>Online</i>) (1x50') Sync → Submission of material online and	2 X 50"	By studying the SMBD Introduction material students can: Able to understand and apply all the previous topics in certain cases	Criteria: Precision and mastery Form of assessment: - Presentation - Active group discussion includes asking and answering (affective)	Students are able to make T-SQL <i>queries</i> according to the case studies given	2.86%





			online discussion Learning methods: Contextual Teaching and Learning (CTL) Assignment: - Practice questions on theory and discussion - Practicum and practicum job			job sheet assignments			
			 Practicum and practicum job sheet work (2x50') 						
17	Online test of the entire material	UAS	UAS	4 X 50"	UAS	UAS	UAS	35%	





Math 3



MALANG STATE POLYTECHNIC

INFORMATICS ENGINEERING

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

15.03				051450750	
IJECI	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION
			(credits)/hour		
th 3	RTI213006	Basic Informatics	2 credits/ 4 hours	3	August 30, 2021
HORIZATION	RPS Developer Le	cturer	MMK Coordinator	Ka PRODI	
	Cahya Rahmat, ST., M.Kom., Dr. Eng Drs. Rawansyah, M.Pd. Deasy Sandhya Elya Ikawati, S. Si., M. Si		Drs. Rawansyah,	Imam Fahru	Rozi, ST., MT.
	Drs. Rawansyah,	M.Pd.	M.Pd.		
	Deasy Sandhya E	ya Ikawati, S. Si., M. Si			
		•			
rning Achievement (CP)	Learning Outcom	es of Study Program Gradua	tes (CPL-Prodi)		
				J	
	S8	Internalize academic values,	norms, and ethics.		
	S 9	Demonstrate a responsible a	attitude towards work in	the field of ex	pertise independently.
	PP1	Mastering the concepts of a	pplied mathematics, bas	ic ICT knowled	ge (Algorithms, Programming, Databases, computer
		networks. etc.). engineering	science. and engineering	g principles in	the ICT field in depth.
	K111	Able to apply logical critical	innovative quality and	maasurahla ti	pinking in carrying out specific work in their field of
	KOI	Able to apply logical, critical	, innovative, quaity, and		a field as a served
		expertise and in accordance	with work competency s	standards in th	le field concerned.
	KU2	Able to demonstrate indepe	ndent, quality and meas	urable perforn	nance.
	Learning Outcom	es Graduates charged to cou	irses (CPL-MK)		
	_				





Able to read and understand general formulas, understand the concept of mean, median mode, know the definition of Graph, Tree and
Vector; able to understand and solve mathematical problems / mathematical models in accordance with case studies given with full
responsibility and prioritizing academic values, norms and ethics.
Able to read and understand general formulas, understand the concept of mean, median mode, know the definition of Graph, Tree and
Vector; able to understand and solve mathematical problems / mathematical models in accordance with case studies given with full
responsibility and prioritizing academic values, norms and etnics.
- General formula case study 1
- General formula case study 2
- Introduction to Statistics (data, mean, median, mode)
- Graph
- Tree
- Introduction: Scalar and Vector Quantity
- Vector Representation, Components of a Given Vector
- Vector Space
- Directional Cosines, Scalar Product of Two Vectors, Vector Product of Two Vectors
- Angle Between Two Vectors, Ratio Of Directions
- Eigenvalues and Eigenvectors
- General formula case study 3
- General formula case study 4
Main :
K A Stroud Engineering Mathematics
K. A Stroud, Engineering Mathematics
1. Jim Hefferon, 2006, Linear Algebra, Vermount USA.





			2. Kreyszig, Erwi	in, 1993, Advanced	Engineerir	g Mathematics, 6	^{6 th} Edition, New York : W	/illey.	
			3. Thomas S. Bly	th, EF Robertson, 2	2007, Basic	Linear Algebra, 2	nd ^{Edition} , Great Britain.		
ruct	ional Media	Softw	are :	Hardware :					
			 Ms PowerPoint Ms Word Internet browsers 	nt Computer					
ne of Lecturer 1. Cahya Rahmat, ST., M.I 2. Drs. Rawansyah, M.P 3. Deasy Sandhya Elya I			I.Kom., Dr. Eng Pd. Ikawati, M.Sc.						
Juire	ments Course								
ek	Planned Final Capabil (Sub-CP-MK)	lity	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Students are able understand and fin solutions from ger formula case stud	to nd neral ies 1	 The general Eclidean formula The general formula for Cityblocks 	Form : Studying Learning methods: Group discussion Case study Learning	1X4X50" - Online (<i>Online</i>) (1x50') Asynchr onous→ video	By studying the general formula, students are expected to be able to represent the formula in systematic calculations.	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	Able to work systematically using the formula.	1.5%





S U S f	Students are able to understand and find solutions from general formula 2 case studies	 Minkowski's general formula Chebyshev's general formula 	E-learning Ims.polinema.ac.id Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structure d tasks (2x50') 1X4X50" - Online (Online) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi	By studying the general formula, students are expected to be able to represent the formula in systematic calculations.	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	Able to work systematically using the formula.	1.5%	
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5	Students are able to understand the definitions and formulas for data, mean, median, mode	Introduction to Statistics (data, mean, median, mode)	Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	- Structure d tasks (2x50') 1X4X50" - Online (Online) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structure d tasks (2×50')	By studying this material students are expected to be able to find the mean, median, mode of a data.	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	• Able to obtain the mean median mode value of a data	1.5%	
Ļ	Students are able to understand the definition of a graph and are able to perform calculations with a mathematical graph	 Definition Graph Type Graph Terminology 	Form : Studying Learning methods: Group discussion Case study	- Online (Online) (1x50') Asynchr onous→ video	By studying this graph material, students are expected to be able to know the definition of a graph, the	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to understand the definition of graphs and be able to perform calculations with mathematical graphs	1.5%	





	QUIZ	QUIZ	Learning Resources: E-learning Ims.polinema.ac.id	pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structured tasks (2x50') 4 X 50"	types of graphs, and the terminology of the graph.	QUIZ	QUIZ	7.5%	
5	Students are able to understand the definition of a tree and are able to perform mathematical tree calculations	 Tree definition Spaning Tree Rooted tree Ordered tree n-ary tree Binary Tree 	Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	1X4X50" - Online (<i>Online</i>) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere	By studying the basic material of programming students can: Know - Tree definition - Spaning Tree - Rooted tree - Ordered tree - n-ary tree Binary Tree	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	 Be able to explain the definition of trees, rooted, ordered and binary trees 	1.5%	





				nce				
				diskusi				
				-				
				Structure				
				d tasks				
,	Students are able to	Scalar and Voctor	Form ·	(2 X50') 1X4X50"	By studying this	Criteria:	 able to know the 	1 5 %
	know the definition of		Studying	174730	material students	Scoring criteria rubric	 able to know the difference between 	1.5%
	Scalar and Vector	Quantity		- Online (are expected to be	Ū	Scalar and Vector	
	Quantity		Learning	Online)	able to know the	Form of assessment:	Quantity	
			Group discussion	Asvnchr	between Scalar	• Presentation		
			Case study	onous→	and Vector	Written test, about achies		
			Learning	video	Quantity	case studies		
			Resources:	pembel				
			E-learning	aiaran				
			Ims.polinema.ac.id	- Online (
				online)				
				(1x50')				
				Sync→				
				video				
				confere				
				nce,				
				diskusi				
				-				
				Structure				
				(2x50')				
3	Students are able to	Vector and its	Form :	1X4X50"	By studying	Criteria:	capable of	1.5%
	represent Vectors,	components	Studying	Online (this material,	Scoring criteria rubric	representing Vectors,	
	Components of a Given		Learning	- Online (Online)	students are	Form of assessment:	Components of a Given	
	Vector		methods:	(1x50')	expected to be	 Presentation 	Vector	
				Asynchr	able to			





			Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structured tasks (2×50')	represent Vectors, Components of a Given Vector	 Written test, about solving case studies 			
0	UTS Students are able to know the definition of Vector Space	UTS Vector Space	UTS Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	4 X 50" 4 X 50" 1X4X50" - Online (<i>Online</i>) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video	UTS By studying this material, students are expected to be able to know the definition of Vector Space	UTS Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	UTS able to know the definition of Vector Space	30%	





1 Stu and of 0 Pro the Veo	Idents are able to know d calculate the Direction Cosines, the Scalar oduct of Two Vectors, e Vector Product of Two ctors	Directional Cosines, Scalar Product of Two Vectors, Vector Product of Two Vectors	Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	confere nce, diskusi - Structure d tasks (2x50') 1X4X50" - Online (Online) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structure d tasks (2x50') 1X4X50"	By studying this material, students are expected to be able to know and calculate the Direction of Cosines, the Scalar Product of Two Vectors, the Vector Product of Two Vectors	Criteria: Scoring criteria rubric Form of assessment: • Presentation • Written test, about solving case studies	 able to know and calculate the direction of Cosines, Scalar Product of Two Vectors, Vector Product of Two Vectors 	1.5%
and bet	d calculate the angle tween two vectors, the io of directions	Vectors, Ratio Of Directions	Studying Learning methods:	- Online (<i>Online</i>)	this material, students are expected to be	Scoring criteria rubric Form of assessment:	calculate the angle between two vectors, the ratio of directions	1.570





		Figomaluos and	Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	(1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structured tasks (2x50') 1x4x50"	able to know and calculate the angle between two vectors, the ratio of directions	Presentation Written test, about solving case studies		1 50/	
3	Students are able to know the definition and how to calculate Eigenvalues and Eigenvectors	Eigenvalues and Eigenvectors	Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	1X4X50" - Online (Online) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video	By studying this material, students are expected to be able to know the definition and how to calculate Eigenvalues and Eigenvectors	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	able to know the definition and how to calculate Eigenvalues and Eigenvectors	1.5%	





4	QUIZ	QUIZ	QUIZ	confere nce, diskusi - Structure d tasks (2x50') 4 X 50"	QUIZ	QUIZ	QUIZ	7.5%
5	Students are able to understand and find solutions from general formula 3 case studies	 Gower's general formula Soergel's general formula 	Form : Studying Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id	1X4X50" - Online (<i>Online</i>) (1x50') Asynchr onous→ video pembel ajaran - Online (online) (1x50') Sync→ video confere nce, diskusi - Structure d tasks (2x50')	By studying the general formula, students are expected to be able to represent the formula in systematic calculations.	Criteria: Scoring criteria rubric Form of assessment: Presentation Written test, about solving case studies	Able to work systematically using the formula.	1.5%
5	Students are able to understand and find	- The general formula of	Form : Studying	1X4X50"	By studying the general formula, students are	Criteria: Scoring criteria rubric	Able to work systematically using the formula.	1.5%





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Object Based Programming



MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING

	I	SEMEST	ER LEARNING PLAN	(RPS)			
SUBJECT	CODE	COURSE CULTURE	WEIGHT (SKS)/Hour	SEMESTER	DATE. PREPARATION		
OBJECT BASED PROGRAMMING	RTI213007	Core Courses	2 Credits / 4 Hours	3	4 JULY 2021		
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI			
	Imam Fahrur Rozi,	ST., MT.	Putra Prima	Imam Fahrur Rozi, ST., MT.			
	Muhammad Shulha	an Khairy, S.Kom, M.Kom	airy, S.Kom, M.Kom Arhandi, ST.,				
	Priska Choirina, SST	, M.Tr.T	M.Kom.				
	Frihandhika Perma	na SPd., MKom.					
	Septian Enggar Suk	mana, S.Pd., MT					
	Banni Satria Andok	o, S. Kom., M.MSI					
	Milyun Ni'ma Shou	mi, S.Kom., M.Kom.					
Learning Achievement	Learning Outcome	s of Study Program Graduates	; (CPL-Prodi)				
(CP)							
	S8 Int	ternalize academic values, nor	ms, and ethics.				
	S9 De	emonstrate a responsible attitu	ude towards work in th	e field of expertise indep	endently.		
	PP1 M	astering the concepts of applie	ed mathematics, basic	CT knowledge (Algorithm	ns, Programming, Databases, computer		
	ne	tworks, etc.), engineering scie	nce, and engineering p	rinciples in the ICT field i	n depth.		
	KU2 At	le to demonstrate independe	nt, quality and measura	able performance.			
	Learning Outcome	s Graduates charged to course	es (CPL-MK)				
	Mastering the cond	cepts of OOP, Class and Object	t, Encapsulation, Inhei	itance, Abstraction, Poly	morphism, GUI, database (JDBC), and Java API;		
	Able to understan	d the difference between O	OP and structural; Ab	e to design applications	s using OOP concepts and principles with full		
	responsibility and t	aking into account academic v	alues, norms and ethic	S.			
Short Course	Object-Based Progr	amming (PBO) course is a cou	rse that teaches studer	nts about the concept of	program development with an object-oriented		
Descriptions	paradigm.						





Learning Materials /	- Object Oriented Programming Concept
Subjects	- class
	- object
	- Encapsulation
	- inheritance
	- Polymorphism
	- Abstract Class
	- Interfaces
	- Java Basic Programming
	- Introduction to GUI and database (JDBC)
	- Introduction to Java APIs
References	Main :
	1. Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentais, Eighth Edition. Network Circle, Santa Ciara: Prentice Hall.
	2. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.
	Supporters:
	1. Kickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Fogyakarta. Andronset.
Instructional Media	Software : Hardware : 1. JDD 12 1. Computer/Laptop RAM minimum 1 GB
	2 Netheans/Intelli
	IDEA
Name of Lecturer	1. Imam Fahrur Rozi, ST., MT.
	2. Muhammad Shulhan Khairy, S.Kom, M.Kom





	3 4 5 6	 Priska Choirina, SST, M.Tr. Frihandhika Permana SPd Septian Enggar Sukmana, Banni Satria Andoko, S. Ko 	.T ., MKom. S.Pd., MT om., M.MSI					
Pre-req Week	Planned Final Capability (Sub-CP-MK)	Algorithms and Programmin Study material (Learning materials)	g Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	 (2) Students are able understand contents of syllabus and lec contracts; Students are able understand the b concept of PBO; Students are able distinguish obj oriented paradi from struct paradigms. 	 (3) Explanation of syllabus and lecture contracts; Introduction to the Basic Concepts of PBO; An explanation of the differences between the object-oriented paradigm and the structural paradigm. 	(4) • Online • Discovery Learning	(5) 3 X 50"	 (6) Listen to material from lecturers and discuss; The discussion applying the basic concepts of PBO was guided by presentation material from the subject lecturer 	(7) <u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Oral test	 (8) Accuracy in explaining the basic concept of PBO; Accuracy in explaining and providing case studies on the differences between the object-oriented paradigm and the structural paradigm; 	(9) 0.8%
2	 Students are able understand the b concept of PBO; Students are able understand concepts of c 	le to basic PBO Basic Concept: PBO introduction The difference between the object- the oriented paradigm class, and the structural	Online Discovery Learning	3 X 50"	 Listen to material from lecturers and discuss; Writing the basis for making classes and objects into program 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u>	 Accuracy in identifying objects; Accuracy in determining the attributes and methods of each 	0.8%





object, encapsulation, inheritance, and polymorphism; • Students are able to create UML models based on PBO case studies.	 paradigm The basic concept of PBO: a. class b. object c. Encapsulation d. inheritance e. Polymorphism Introduction to UML modeling 			code based on class diagrams; • Practice drawing UML Class Diagrams.	Oral test	 object that has been identified; Accuracy in explaining the description of the basic concept of PBO; Accuracy in drawing UML Class Diagrams based on case studies. 	
 3 •Students are able to understand the basic concept of encapsulation; •Students are able to make UML notation in the form of access modifier notation and static notation. 	Encapsulation: • constructor • Access modifiers • Attribute/Method Class • Instantiation Attributes/Methods • Setters and Getters • UML: Access modifier notation and static notation	 Online Discovery Learning Self-Directed Learning 	3 X 50″	 Listen to material from lecturers; Discussion to understand the implementation of constructors, access modifiers, attributes, getter setters in accordance with the presentation material guidelines and handbooks; Discussion about the difference between instantiation attributes and class attributes, between 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Oral test	 Accuracy in determining the constructor and in instantiating using the constructor; Accuracy in determining modifier access of an attribute and method; Accuracy in explaining the differences between instantiation attributes/methods and class attributes/methods; Accuracy in creating 	0.8%





			• Opline	2 1 50%	 instantiation methods and class methods; Discussion on the use of setters and getters. 	Critoria	 setters and getters; Accuracy in writing static notation and modifier access. 	0.8%
4	 Students are able to understand the concept of class relations; Students are able to design class diagrams from certain case studies. 	 Has-A relations: Has-A relation (Case study 1 class has a has-a relationship with 1 object from another class) Depiction of class relationships with class diagrams Has-A relationship (Case study 1 class has a has-a relationship with more than 1 object from another class) 	 Online Discovery Learning Self-Directed Learning 	3 X 50	 Listen to material; Discussion to implement class relations guided by presentation materials and guidebooks; The practice describes the design of class diagrams from the cases given and discusses them. 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Oral test	 Accuracy in translating class diagrams into programs; Accuracy in designing a class diagram of a particular case. 	0.8%
5	•Students are able to answer quiz questions properly and correctly related to meeting material 1 - 4.	Quiz 1 Meeting materials 1- 4	Online Exam	3 X 50"	• Answer quiz questions	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Written/online test	 Accuracy in answering questions. 	12.5%
6,7	•Students are able to understand the concept of	inheritance: • Definition of	OnlineDiscovery	3 X 50"	Listen to material;Discussions on	Criteria: Accuracy in answering questions	 Accuracy in identifying classes that have 	0.8%





	inheritance.	 Inheritance Single and Multilevel Inheritance Super keywords UML:inheritance relations 	Learning • Self-Directed Learning		 applying the concept of inheritance guided by presentation material and book references referred to by the course lecturer; Illustrates inheritance relationships using UML diagrams. 	<u>Form:</u> Oral test	inheritance relations; • Accuracy in designing classes that have inheritance relations.	
8	• Students are able to answer UTS questions properly and correctly related to meeting material 6-8.	 UTS ● Meeting materials 6- 8 	Online Exam	3 X 50"	 Doing questions in the form of a simulation 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in working on questions Online / Writing 	25%
9	 Students are able to understand the concepts of Overriding and Overloading. 	 Overriding Overloading 	 Online Discovery Learning Self-Directed Learning 	3 X 50"	 Listen to material; Discussions on implementing overriding and overloading were guided by materials and reference books for the subject lecturers. 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in identifying method overriding and overloading 	0.8%
10	• Students are able to understand the	Abstract Classes: • Abstract Class	●Online	3 X 50"	• Listen to material	Criteria: Accuracy in answering	 Accuracy in designing 	0.8%





	concept of Abstract Class	concept • Abstract methods • UML: abstract notation	 Discovery Learning Self-Directed Learning 		 Discussion to explore the concept of abstract classes and methods and make examples of their implementation 	questions <u>Form:</u> oral test	 an abstract class Accuracy in modeling in class diagrams 	
11	•Students are able to understand the concept of Interface.	 Interfaces: Interfaces concept Different Interface and Abstract Class Creating interfaces that implements to interfaces UML: implements interface and relation notation 	 Online Discovery Learning Self-Directed Learning 	3 X 50"	 Listen to material Discussion to explore the interface concept and make examples of its application Describe the relationship between abstract classes and interfaces using UML diagrams 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in designing the interface Accuracy in modeling in class diagrams 	0.8%
12	 Students are able to understand the concept of Polymorphism. 	 Polymorphism: Polymorphism concept heterogeneous collections polymorphic arguments virtual method invocations 	 Online Discovery Learning Self-Directed Learning 	3 X 50″	 Listen to material Pay attention to the simulation 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in explaining the use of polymorphism 	0.8%





		• cast objects						
13	Quiz 2	 Meeting materials 09-12 	Online Exam	3 X 50″	• Answer questions / questions	<u>Criteria:</u> Accuracy in answering questions <u>Format:</u> written/online test	 Accuracy in answering questions 	12.5%
14	• Students are able to understand the concept of GUI.	GUIs: •Frames, Menus, Textfields, Buttons, Labels, Comboboxes, Radiobuttons, Checkboxes •Event Handling (action performed)	 Online Discovery Learning Self-Directed Learning 	3 X 50″	 Listen to material Discussion in groups to get to know the GUI and its tools' functions. Presenting the results of discussions in class 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in understanding GUI, especially functions and menus on GUI tools Presentation skills 	0.8%
15	 Students are able to understand the concept of GUI and Database and Java API Students are able to understand the concept of Java API. 	GUI, Database and Java API: •MySQL JDBC •CRUD with GUI •Java Docs	 Online Discovery Learning Self-Directed Learning 	3 X 50″	 Listen to material Pay attention to the simulation 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> oral test	 Accuracy in explaining usage of Java Docs Accuracy in explaining the use of Database (JDBC) Accuracy in making windows Accuracy in making the components that will be added to it 	0.8%





16	 Students are able to apply the theory they have learned into a comprehensive application. 	Big mission: • Designing a class diagram of a given case.	 Practice Project Based Learning 	3 X 50"	 Identify classes and describe them in class diagrams Practice implementing the results of the design into the program 	<u>Criteria:</u> Accuracy in developing large projects/tasks <u>Format:</u> Assessment of Practical activity	 Accuracy in identifying class Accuracy in the depiction of class diagrams. 	10%
17	•Students are able to answer UAS questions properly and correctly related to meeting material 1-16.	UAS: •Materials start meeting 1-16	Online Exam	3 X 50″	 Doing online exam questions 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> online test	 Accuracy in answering questions. 	30%

Object-Based Programming Practicum

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	SEMESTER LEARNING PLAN (RPS)									
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION					
OBJECT-BASED PROGRAMMING PRACTICUM	RTI213008	Core Courses	3 credits/6 hours	3	July 4, 2020					





AUTHORIZATIO	RPS Developer Lecturer	ММК	Ka PRODI
N		Coordinator	
	Imam Fahrur Rozi, ST., MT.	Үорру	Imam Fahrur Rozi, ST., MT.
	Muhammad Shulhan Khairy, S.Kom, M.Kom	Yunhasnawa,	
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	Frihandhika Permana SPd., MKom.		
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	Banni Satria Andoko, S. Kom., M.MSI		
	Milyun Ni'ma Shoumi, S.Kom., M.Kom.		
Learning	Learning Outcomes of Study Program Graduates (CP)	L-Prodi)	
Achievement	S8 Internalize academic values, norms, and ethics.		
	S9 Demonstrate a responsible attitude towards wor	k in the field of exp	ertise independently.
	PP1 Mastering the concepts of applied mathematics.	, basic ICT knowledg	e (Algorithms, Programming, Databases, computer networks, etc.).
	engineering science, and engineering principles in	n the ICT field in de	oth.
	KU2 Able to demonstrate independent, quality and m	easurable performa	ince.
	Learning Outcomes Graduates charged to courses (CP	L-MK)	
	Mastering the concepts of OOP, Class and Object, Enca	psulation, Inheritar	nce, Abstraction, Polymorphism, GUI, database (JDBC), and Java API; Able to
	understand the difference between OOP and structura	l; Able to design ap	plications using OOP concepts and principles with full responsibility and
	taking into account academic values, norms and ethics	•	
	Graduate Learning Outcomes that are charged to cou	rses (CPL-MK Sub)	
	- Students are able to explain the basic concepts of I	РВО (С2)	
	- Students are able to analyze the differences betwe	en structural progr	amming and object-oriented programming (C4)
	- Students are able to identify the form of Class diag	ram modeling (C1)	
	 Students are able to apply the concept of class and the programming language (C3) 	object in the form	of programming and apply the steps for accessing attributes and methods in
	- Students are able to apply the exception concept u	sing try-catch in pro	ogramming and apply class diagrams in certain cases (C3)
	- Students are able to apply encapsulation in a progr	amming language (C3)





	- Students are able to analyze class relations based on certain case studies (C4)
	- Students are able to apply class relations in the form of diagrams (C3)
	- Students are able to apply the results of case study analysis to the program form (C3)
	- Students are able to define the notion of inheritance (C2)
	- Students are able to apply the concepts of single and multiple inheritance, as well as inheritance relations in the form of diagrams (C3)
	- Students are able to analyze cases contained in exam questions (C4)
	- Students are able to apply the results of case study analysis to the program form (C3)
	- Students are able to apply the concepts of overriding and overloading, as well as abstract classes and methods in programming languages (C3)
	- Students are able to apply the interface and implement a class in the interface (C3)
	- Students are able to apply the concepts of polymorphism, virtual methods and object casting in programming languages (C3)
	- Students are able to apply GUI components to the development of a program and event handling in accordance with the GUI components used (C3)
	- Students are able to create APIs from the Java programming language (C6)
	- Students are able to implement a database connection with the Java programming language and GUI on Java programs using databases (C3)
Short Course Descriptions	Object-Based Programming (PBO) course is a course that teaches students the concept of program development with an object-oriented paradigm. so that students are able to develop a program with language concepts that are more easily understood by humans.
Learning	OOP concept
Subjects	Classes and objects
	Encapsulation
	Class relations
	inheritance
	Polymorphism





		•	Abstr	ract Class								
		•	Inter	faces								
		•	Java	Basic Programm	ling							
		•	GUI i	ntroduction								
		•	Intro	duction to Java	APIs							
		_	intro									
Refer	ences	Main										
		Horstn	nann, (CS (20 18). Core	Java Volume I–Fun	lamentals, Elev	ven th Edi	<i>tion.</i> Network Circle, S	anta Clara: Prentice	Hall.		
		Horstn	stmann, CS (20 19). Core Java Volume II–Advanced Features, Eleven th Edition. Network Circle, Santa Clara: Prentice Hall.									
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		Suppo	upporters:									
		Rickya	nto, I.	(2005). <i>Object-C</i>	Driented Programmi	ng Basics with .	lava 2. Yo	gyakarta: Andi Offset				
Instru	ctional	Softwa	re :		Hardware :							
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Name	of	Imam	ahrur	Rozi, ST., MT.								
Lectu	rer	Muhar	nmad	Shulhan Khairy,	S.Kom, M.Kom							
		Priska	Choirir	na, SST, M.Tr.T								
		Frihan	dhika F	Permana SPd., N	1Kom.							
		Septia	Septian Enggar Sukmana, S.Pd., MT									
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Cours	rements	Algorit	nms ai	nu Programming	5							
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IVI				av matorial				Student Learning	Accoccmont	Assessment Indicator	Woight	
in g	Canabilit	tv	Stu (Learn	dy material ling materials)	Learning Forms Methods	and Estimat	ted	Student Learning	Assessment Criteria &	Assessment Indicator	Weight (%)	





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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students are able to explain the basic concepts of PBO (C2) Students are able to analyze the differences between structural programming and object-oriented programming (C4) Students are able to identify Class diagram modeling form (C1) 	 Discussion of syllabus and lecture contracts The difference between the object- oriented paradigm and the structural paradigm The basic concept of PBO a. class b. object c. Encapsulation inheritance e. Polymorphism Introduction to UML Class Diagram modeling 	Form : Practice - Online (Online) (1x50') Asinkron \rightarrow video pembelajaran - Online (online)(1x50') Sinkron \rightarrow Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: - Task 1 : Create classes and objects, and search for objects in the real world to define attributes, behavior and their implementation using the Java programming language (4x50') Offline	6x50'	 Listen to material lectures from lecturers and discuss Practice applying the basic concepts of PBO are guided by a jobsheet Practice Drawing UML Class Diagrams 	Criteria: Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in explaining the difference between OOP and Structural paradigms Accuracy in practicing the concepts of class, object, encapsulation, inheritance and polymorphism Accuracy in providing examples of each of the basic OOP concepts 	
2	• Students are able to apply the concept of class and object in the form of programming (C3)	 class object Attribute method Instantiation 	Form : Practice - Online (<i>Online</i>) (1x50') Asinkron → video pembelajaran - Online (<i>online</i>)(1x50') Sinkron → Vcon , diskusi	6x50'	 Listen to practical instructions Writing the basis for making classes and objects into program code based on class diagrams 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in identifying objects Accuracy in determining the attributes and methods of each object that has been identified 	





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	 Students are able to apply the steps for accessing attributes and methods in programming languages (C3) Students are able to apply the exception concept using try-catch in programming (C3) Students are able to apply class diagrams in certain cases (C3) 	6. 7. 8.	Accessing Attributes and Methods Try-Catch UML:Class Diagrams	Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 2 : Create classes and objects using the Java programming language based on the class diagrams in the offline book rental shop case study (4x50')			Implement the use of try catch		•	Accuracy in practice depiction into class diagrams	
3	Students are able to apply encapsulation in a programming language (C3)	1. 2. 3. 4. 5. 6.	constructor Access modifiers Attribute/Method Class Instantiation Attributes/Methods Setters and getters UML: Access modifier notation and static notation	Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id	6x50'	•	Listen to practical instructions Practice implementing constructors, access modifiers, attributes, getter setters guided by the jobsheet Discuss the difference between instantiation attributes and class attributes, between instantiation methods and class methods Discuss the use of setters and getters	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	•	Accuracy in practice determines the constructor and accuracy in instantiating using the constructor Accuracy in determining modifier access of an attribute and method Accuracy in explaining the differences between instantiation attributes/methods and class attributes/methods Accuracy in creating setters and getters Accuracy in writing static notation, and modifier access Accuracy in practicing the	





			Assignment: Task 3 : Implement constructors, access modifiers, attributes, getter setters in the Java programming language based on cooperative case studies (4x50') Offline				instructions on the jobsheet	
4	 Students are able to analyze class relations based on certain case studies (C4) Students are able to apply class relations in the form of diagrams (C3) 	 Has-A relation (Case study 1 class has a has-a relationship with 1 object from another class) Depiction of class relationships with class diagrams Has-A relationship (Case study 1 class has a has-a relationship with more than 1 object from another class) 	Form : Practice - Online (Online) (1x50') Asinkron \rightarrow video pembelajaran - Online (online)(1x50') Sinkron \rightarrow Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 4 : Implement class relations in the Java programming language based on a particular case study and draw a class diagram design from the given case (4x50') Offline	6x50'	 Listen to practical instructions Practice implementing class relations guided by the jobsheet Practice illustrating a class diagram design from a given case, by discussing it 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in translating class diagrams into programs Accuracy in designing a class diagram of a particular case Accuracy in practicing the instructions on the jobsheet 	2.5%
5	Students are able to analyze cases contained	Quiz 1 (Practicum Examination and Presentation of	Form : Practice - Online (<i>Online</i>) (1x50') Asinkron → video pembelajaran	6x50'	Presentation of quiz results	Criteria: Accuracy in applying OOP concepts	 Accuracy in working on practical questions 	15%





	 in exam questions (C4) Students are able to apply the results of case study analysis to the program form (C3) Students are able to explain the results of quiz exam assignments (C2) 	Examination Results) - Materials for meetings 1-4	- Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 5 : Analyze the cases given, then apply the results of the analysis to the Java programming language (4x50') Offline			Form: Assessment of practice activities		
6,7	 Students are able to define the notion of inheritance (C2) Students are able to apply the concept of single and multiple inheritance (C3) Students are able to apply inheritance relations in the form of diagrams (C3) 	 Definition of Inheritance Single and Multilevel Inheritance Super keywords UML:inheritance relations 	Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id	6x50'	 Listen to practical instructions Practice applying the concept of inheritance guided by a jobsheet Depict inheritance relationships using UML diagrams 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in identifying classes that have inheritance relations Accuracy in designing classes that have inheritance relations Accuracy in practicing the instructions on the jobsheet 	





			Assignment: Task 6.7 : Implement the concept of inheritance in the Java programming language based on a particular case study, and describe the UML inheritance relationship in a given case (4x50') Offline					
8	 Students are able to analyze cases contained in exam questions (C4) Students are able to apply the results of case study analysis to the program form (C3) Students are able to explain the results of midterm exam assignments (C2) 	Mid Semester Examination (Practicum Examination and Presentation of Examination Results) - Meeting materials 6-7	Form : Practice - Online (Online) (1x50') Asinkron \rightarrow video pembelajaran - Online (online)(1x50') Sinkron \rightarrow Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 8 : Analyze the cases given, then apply the results of the analysis to the Java programming language (4x50') Offline	6x50'	Do the questions in practical form	Criteria: Accuracy in applying OOP concepts Form: Assessment of practice activities	Accuracy in working on practical questions	30%





9	Students are able to apply the concepts of overriding and overloading in programming languages (C3)	 Overriding Overloading 	Form : Practice - Online (Online) $(1x50')$ Asinkron \rightarrow video pembelajaran - Online (online)(1x50') Sinkron \rightarrow Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 9 : Implement the concept of overriding and overloading in the Java programming language	6x50'	 Listen to practical instructions Practice applying overriding and overloading guided by the jobsheet 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in identifying method overriding and overloading Accuracy in practicing the instructions on the jobsheet 	2.5%
10	Students are able to apply abstract concepts to classes and methods (C3)	 Abstract Class concept Abstract methods UML: abstract notation 	Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Discovery Learning Learning Resources: E-learning Ims.polinema.ac.id	6x50'	 Listen to practical instructions Practice applying abstract class concepts and methods as well as interfaces guided by a jobsheet 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in designing an abstract class Accuracy in modeling in class diagrams Accuracy in practicing the instructions on the jobsheet 	2.5%





			Assignment: Task 10 : Implement abstract class and method concepts and interfaces in the Java programming language (4x50') Offline					
11	Students are able to apply the interface and implement a class in the interface (C3)	 Interfaces concept Different Interface and Abstract Class Interface creation How to create a class that implements to an interface UML: implements interface and relation notation 	Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Discovery Learning Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 11 : Implement abstract class and interface concepts in the Java programming language using UML diagrams (4x50') Offline	6x50'	 Practice applying interface concepts guided by a jobsheet Describe the relationship between abstract classes and interfaces using UML diagrams 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in designing the interface Accuracy in modeling in class diagrams Accuracy in practicing the instructions on the jobsheet 	
12	• Students are able to apply the concept of polymorphism in programming languages (C3)	 Polymorphism concept heterogeneous collections polymorphic arguments 	Form : Practice - Online (<i>Online</i>) (1x50') Asinkron → video pembelajaran - Online (<i>online</i>)(1x50') Sinkron → Vcon , diskusi	6x50'	 Listen to practical instructions Practice applying the concept of polymorphism guided by a jobsheet 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in explaining the use of polymorphism Accuracy in practicing the instructions on the jobsheet 	





	Students are	4. virtual method							
	able to apply	invocations	Learning methods: Self Directed Learning						
	and casting	5. cast objects	(SDL) ,						
	objects (C3)		Problem Based Learning (PBL)						
			E-learning						
			lms.polinema.ac.id						
			Assignment:						
			Task 12 : Implement the concept of polymorphism in						
			the Java programming						
			language based on a						
			(4x50') Offline						_
13	 Students are able to analyze 	Quiz 2 (Practicum	Form : Practice	6x50'	Do the questions in practical form	Criteria: Accuracy in applying OOP	Accuracy in completing practical questions	15%	
	cases contained	Presentation of	- Online (Online)			concepts	practical questions		
	in exam questions (C4)	Examination Results) - Materials for meeting 10-13	$(1x50')$ Asinkron \rightarrow video pembelaiaran			Form: Assessment			
	 Students are 		- Online (<i>online</i>)(1x50')			of practice activities			
	able to apply the results of		Sinkron → Vcon , diskusi						
	case study		Leensing weatheder						
	program form		Self Directed Learning						
	(C3)		(SDL), Drahlam Dagad Learning						
	 Students are able to explain 		(PBL)						
	the results of		Learning Resources:						
	assignments		E-learning						
	(C2)		lms.polinema.ac.id						
			Assignment:						
			Task 13 : Analyze the cases given, then apply the						





			regulto of the surplusts to the	1				
			results of the analysis to the					
			Java programming					
14	 Students are able to apply GUI components to the development of a program (C3) Students are able to implement event handling in accordance with the GUI components used (C3) 	 Frames, Menus, Textfields, Buttons, Labels, Comboboxes, Radiobuttons, Checkboxes Event Handling (action performed) 	language (4x50') Offline Form : Practice • Online (Online) (1x50') Asinkron \rightarrow video pembelajaran • Online (online)(1x50') Sinkron \rightarrow Vcon , diskusi Learning methods: Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 14 : Implement a GUI and its components and event handling in the Java programming language based on a specific case study (4x50') Offlino	6x50'	 Listen to practical instructions Practice implementing making a GUI and its components guided by a jobsheet Practice implementing event handling guided by a jobsheet 	<u>Criteria:</u> Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in making windows Accuracy in making the components that will be added to it Accuracy in practicing the instructions on the jobsheet 	
15	 Students are able to create APIs from the Java programming language (C6) Students are able to implement a database 	 Java Docs collection MySQL (JDBC) Database with GUI CRUD with GUI Model classes, DAO classes 	Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods:	6x50'	 Listen to practical instructions Practice implementing the JAVA API Database (JDBC) connection to interact with the database directly from the class view (form) guided by a jobsheet Practice implementing JDBC with CRUD on a 	Criteria: Accuracy in following the practicum jobsheet <u>Form:</u> Assessment of practice activities	 Accuracy in explaining usage of Java Docs Accuracy in explaining the use of JDBC Accuracy in practicing the instructions on the jobsheet 	





	 connection with the Java programming language (C3) Students are able to apply GUI to Java programs using a database (C3) 		Self Directed Learning (SDL) , Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 15 : Implement JAVA API Database (JDBC) connection to interact with database directly from class view (form), JDBC with CRUD on simple database based on certain case studies (4x50') Offline		simple database guided by a jobsheet			
16	Students are able to explain the progress of the big task being done (C2)	1. Designing a class diagram of a given case	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 6 : Building projects in groups based on selected case studies (4x50') Offline	6x50'	 Identify classes and describe them in class diagrams Practice implementing the results of the design into the program 	<u>Criteria:</u> Accuracy in developing large projects/tasks <u>Form:</u> Assessment of practice activities	 Accuracy in identifying class Accuracy in the depiction of class diagrams Accuracy in practicing the instructions on the jobsheet 	





17	Students are able to explain the results of the big task being done (C2)	Final Semester Examination (UAS) - Final big assignment demo	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 17 : Presenting projects that have been developed in groups based on selected case studies (4x50') Offline	6x50'	Describe the results of the major tasks carried out	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> large task yield test	 Accuracy in completing large tasks 	30%	
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Semester 4

1. Citizenship

SHIK NEGERIA	MALANG S	TATE POLYTECH	INIC										
A CONTRACT OF A	INFORMATIC	ORMATICS ENGINEERING											
	STUDY PROG	RAM : D 4 INFORMAT	ICS ENGINEERIN	١G									
	SEMESTER LEARNING PLAN (RPS)												
SUBJECT	CODE	DATE. PREPARATION											
Citizenship	RTI214001	Basic Informatics	2 credits/ 3 hours	2	16 FEBRUARY 2017								
AUTHORIZATION	RPS Developer Lect	urer	MMK Coordinator	Ka PRODI									
	Ane Fany Novitasar	, SH., M.Kn	Ahmad Bahaudin	Ir. Deddy Ku	sbianto PA., MMKom.								
Learning Achievement (CP)	Learning Outcomes	of Study Program Graduates	(CPL-Prodi)										
		attaction to construct the second to]	hand a second of the stress hand as Bernardia								
	S3 Contrib	uting to improving the quality	of life in society, hatic	on, state, and t	ne advancement of civilization based on Pancasila.								
	S8 Interna	lize academic values, norms, a	and ethics.										
	KU2 Able to	demonstrate independent, q	uality and measurable	performance.									
	S4 Act as a nation.	citizen who is proud and love	es the motherland, has	nationalism a	nd a sense of responsibility to the state and								
	S5 Respect	t the diversity of cultures, view	vs, religions and beliefs	s, as well as th	e opinions or original findings of others.								
	S6 Workin	g together and having social s	ensitivity and concern	for society and	d the environment.								
	S7 Obey th	e law and discipline in the life	e of society and the sta	te.									
	Learning Outcomes	Graduates charged to course	es (CPL-MK)										





	Producing students who are moral, democratic and participatory in social and state life, able to understand and analyze development
	citizens in daily life -day.
Short Course Descriptions	This course studies civic education, between civic education and character education, the ideals of civic education, the relationship
	between science and education, the urgency of constitutional education
Learning Materials / Subjects	Citizenship education, between citizenship education and character education, the ideals of civic education, the relationship between
	science and education, the urgency of constitutional education
References	Main :
	1. Hairus 2013 Citizenshin Education Teaching Module Polynema Malang
	2.
	Robert Klitgaard, et al. 2002. Guide to Eradicating Corruption in Regional Government. The Torch Book, Jakarta.
	3. Ahmad Zaki, Forming an Honest Nation's Character free of Corruption, http://ogaloogi.com/memformasi-kartu-bangsa-ladi-
	merdeka-korupsi/, accessed on 7 June 2012.
	4. Ariesti Vetami Gaos, Against the regeneration of Corruptors, http://perspektif.net/english/article.php?article_id=1441, accessed
	11 June 2012.
	J. Becang lia, Baligian and Liberatian, http://cochud.kompaciana.com/2010/08/17/agama.don.nomhabacan/
	Beseng Jie, Religion and Liberation, http://sosbud.kompasiana.com/2010/08/17/agama-dan-pembebasan/
	Dien Adie, Character-Based Education, http://edukasi.kompasiana.com/2011/09/01/dinding-based-character/, accessed 11 July 2012
	7.
	Erika Revida, Corruption in Indonesia: Problems and Solutions, http://repository.usu.ac.id/bitstream/123456789/3800/1/fisip-
	erika1.pdf, accessed on 7 June 2012.
	 Fathur Rahman, Anti-Corruption Education, http://www.equator-news.com/kolom/20120410/dinding-anti-corruption, accessed 11 June 2012
	Supporters:





		1 2 3 4 5 6	Iding R. Hasan, Mea accessed on 27 Aug Jimy Assiddiqy, The http://jimly.com/ma M. Bashori Muchsin Mirza Nasution, Law accessed on 15 July Jade Pane, Putussn http://www.analisa 2012. Siti Mugi Rahayau, B July 2012.	suring the Urgency ust 2010. Concept of the Ind akalah/namafile/51 , Young Civil Serva v and Constitution, 2012. MK which provides daily.com/news/re	onesian Law 7/Konsep_N nts and Idol http://buso Political Ec ad/2012/02	n Amendment to t v State, legara_Hukum_In s of Money, Medi car-manuales.com lucation, L/16/30692/juang //edukasi.kompas	he 1945 Constitution, P donesia.pdf, accessed 4 a Indonesia, 13 Decemb /download/fungsi-dan-l an_mk_yang_beri_dind siana.com/2012/05/02/0	eople's Mind, 26 August 20 June 2012. er 2011. kedudukan-konstitute-6.ht ing_kumham/, access 14 J dinding-had-hak-asasi/, as	010, tml, une kes 11
Instruct	ional Media	Softw	vare :	Hardware :					
				Projector					
Name o	f Lecturer								
Week	Planned Final Canabi	lity	Study material	Learning Forms	Estimated	Student Learning	Assessment Criteria &	Assessment Indicator	Rating
Week	(Sub-CP-MK)		(Learning materials)	and Methods	time	Experience	Forms		Weight (%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1-2 Students are able to expla about National Identity		lain	Introduction National identity as a national character The process of nation and state	Lecture Discussion Question and answer	3 X 45"	Paying Attention Ask Group discussion Provide examples Summarize material	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5





3-4	Students are able to explain about the State and the Constitution	State and Constitution The relationship and role of the constitution in the life of the state	Lecture Discussion Question and answer	3 X 45″	Paying Attention Ask Provide examples Summarize material Create group discussion groups	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5
5		State and citizens Rights and Obligations of Citizens	Lecture Discussion Question and answer	3 X 45″	Paying Attention Ask Answer questions Provide examples Summarize material group discussion	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5
7		State law Human rights	Lecture Discussion Case study Structured assignments	3 X 45"	Presentation Paying Attention Ask Answer questions	QUIZ	 Attitude Accuracy of explanation Communication attraction 	7.5





				Provide examples Summarize material group discussion		 Ability and Accuracy of answers Example relevance 	
8-9	Democracy The journey of democracy in Indonesia	Lecture Discussion Case study Structured assignments Question and answer	3 X 45"	Presentation Paying Attention Ask Answer questions group discussion	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5
10	UTS	Exam	3 X 45"	Doing midterm exam questions	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	15
11-12	Archipelagic Outlook Indonesian Geopolitics	Lecture Discussion Case study Question and answer Study tours	3 X 45″	Presentation Paying Attention Ask Answer questions Provide examples	UTS	 Attitude Accuracy of explanation Communication attraction 	7.5




				Summarize material		 Ability and Accuracy of answers Example relevance 	
13	National defence Asta Gatra in the embodiment of national resilience Globalization and national resilience	Lecture Discussion Case study Structured assignments Question and answer Study tours	3 X 45"	Presentation Paying Attention Ask Answer questions Provide examples Summarize material group discussion	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5
15-16	National Integration Plurality Integration Strategy	Lecture Discussion Case study Structured assignments Question and answer	3 X 45″	Paying Attention Ask Answer questions Provide examples Summarize material Presentation	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	7.5
17-18	Understanding Corruption Crime	Lecture Discussion Case study Structured assignments Question and answer	3 X 45"	Paying Attention Ask Answer questions Provide examples	Task completion	 Attitude Accuracy of explanation Communication attraction 	7.5





				Summarize material group discussion Presentation		 Ability and Accuracy of answers Example relevance 	
19	UAS	Exam	3 X 45″	Work on end of semester exam questions	Task completion	 Attitude Accuracy of explanation Communication attraction Ability and Accuracy of answers Example relevance 	25





2. Object Oriented Analysis And Design

Jewilk NEGERIAR	MALANG	STATE POLYTEC	HNIC		
TO A C PAGE	ACCOUNTIN	G MAJOR			
	STUDY PROC	GRAM : D4 INFORMAT	FICS ENGINEERI	NG	
		SEMESTER LE	ARNING PLA	N (RPS)	
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION
Object Oriented Analysis and Design	RTI214002	Core courses	2 credits / 4 hours	3	July 3, 2021
AUTHORIZATION	RPS Developer Le	cturer	MMK Coordinator	Ka PRODI	
	Ridwan Rismanto	, SST., M.Kom.	Banni Satria	Imam Fahrur R	ozi, ST., MT.
	Deddy Kusbianto	PA, Ir., M.Mkom.	Andoko, S.Kom.,		
	Banni Satria Ando	oko, S.Kom., MMSI., Dr. Eng.	MMSI., Dr. Eng		
Learning Achievement (CP)	Learning Outcom	es of Study Program Graduate	es (CPL-Prodi)		
	S8 Internaliz	e academic values, norms, and	d ethics.	_	
	S9 Demonstr	rate a responsible attitude tow	vards work in the field	of expertise indep	pendently.
	PP1 Mastering	, the concepts of applied math	nematics, basic knowle	dge of ICT (Algori	thms, Programming, Databases, Computer
	Networks, etc.), e	ngineering science, and engin	eering principles in the	e field of ICT in de	pth.
	PP2 Mastering	g ICT product development me	ethods to provide the r	ight solutions thre	ough one or more application domains.
	KU2 Able to de	emonstrate independent, qual	ity and measurable pe	rformance.	
	Learning Outcom	es Graduates charged to cour	ses (CPL-MK)		
	Able to master the	e concept of software analysis	and design with an ob	ject-oriented app	proach in depth; Able to analyze a problem and
	make software de	esign designs in certain applica	tion domains as a form	n of quality solution	ons, which are carried out with full responsibility
	and pay attention	to academic values, norms, a	nd ethics; Able to appl	y various UML dia	agram models used in the process of developing ICT
	products indepen	dently.			





Short Course Descriptions	This course is part of a competency unit that must be mastered by a prospective software application system development analyst, so as
	to be able to produce object-oriented software design documents, which are ready to be used by programmers to implement them in the
	various programming languages needed.
Learning Materials / Subjects	1. Introduction
	2. Modeling Requirements: Use Cases
	3. Modeling System Workflows: Activity Diagrams
	4. Modeling a System's Logical Structure: Introducing Classes and Class Diagrams
	5. Modeling a System's Logical Structure: Advanced Class Diagrams
	6. Bringing Your Classes to Life: Object Diagrams
	7. Modeling Ordered Interactions: Sequence Diagrams
	8. Focusing on Interaction Links: Communication Diagrams
	9. Focusing on Interaction Timing: Timing Diagrams
	10. Completing the Interaction Picture: Interaction Overview Diagrams
	11. Modeling a Class's Internal Structure: Composite Structures
	12. Managing and Reusing Your System's Parts: Component Diagrams
	13. Organizing Your Model: Packages
	14. Modeling an Object's State: State Machine Diagrams
	15. Modeling Your Deployed System: Deployment Diagrams
References	Main :
	Hamilton, K., & Miles, R. (2006). Learning UML 2.0 (Vol. 286). Sebastopol, USA: O'Reilly.
	Supporters:





		Hunt, J. (2000). The Unif Media. Lee, M., Kim, H., Kim, J., (en)/toc. html.	ied Process for Pract Lee, J., & Gum, D. (2	titioners: Object	-oriented Design, the UML 5.0 user guide. 2009-03-11	. and Java (Vol. 12). Sp]. http://staruml, sour	ringer Science & Busine ceforge, net/docs/user	ess -guide		
Instruct	tional Media	Software :	oftware : Hardware :							
		StarUML 5, JDK 1.8, Net	StarUML 5, JDK 1.8, Netbeans 8 Computer/Laptop with a minimum of 512 MB RAM, LCD Projector/TV Monitor							
Name o	of Lecturer	Ridwan Rismanto, SST.,	Ridwan Rismanto, SST., M.Kom.							
		Deddy Kusbianto PA, Ir.,	Deddy Kusbianto PA, Ir., M.Mkom.							
		Banni Satria Andoko, S.k	om., MMSI., Dr. Eng							
		Muhammad Shulhan Kh	airy, S.Kom., M.Kom							
		Ariadi Retno Ririd, S.Kon	n., M.Kom.							
Require	ements Course	Algorithms and Program	ming							
Week Planned Final Study material Capability (Learning materials) (Sub-CP-MK)			Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
1	Introduction									





		 Section 1.7. A First Taste of UML Section 1.8. Want More Information? 						
2	Modeling Requirements: Use Cases	 Section 2.1. Capturing a System Requirement Section 2.2. Use Case Relationships Section 2.3. Use Case Overview Diagrams USection 2.4. What's Next 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1: create a use case from a simple case example	6x50' - Online (Online) (2x50') Asynchronous → learning video - Online (4x50') Sync → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember <i>Usecase</i> diagrams 2. Understand the use of Usecases	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create use case diagrams according to specified business needs	2%
3	Modeling System Workflows: Activity Diagrams	 Section 3.1. Activity Diagram Essentials Section 3.2. Activities and Actions Section 3.3. Decisions and Merges Section 3.4. Doing Multiple Tasks at the Same Time Section 3.5. Time Events 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make activity	6x50' - Online (Online) (2x50') Asynchronous → learning video - Online (4x50') Sync → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember <i>Activity</i> diagrams 2. Understand the use of Activity Diagrams	<u>Criteria: Rubric,</u> <u>assessment criteria</u> <u>Form: Oral test</u>	Able to create activity diagrams according to specified business needs	2%





		 Section 3.6. Calling Other Activities Section 3.7. Objects Section 3.8. Sending and Receiving Signals Section 3.9. Starting an Activity Section 3.10. Ending Activities and Flows Section 3.11. Partitions (or Swimlanes) Section 3.12. Managing Complex Activity Diagrams Section 3.13. What's 	diagrams from simple case examples					
4	Modeling a System's Logical Structure: Introducing Classes and Class Diagrams	 Section 4.1. What Is a Class? Section 4.2. Getting Started with Classes in UML Section 4.3. visibility Section 4.4. Class State: Attributes Section 4.5. Class Behavior: Operations Section 4.6. Static Parts of Your Classes 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a class diagram from a	6x50' - Online (Online) (2x50') Asynchronous → learning video - Online (4x50') Sync → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember <i>class</i> diagrams 2. Understand the use of the Diagram class	<u>Criteria:</u> Rubric, assessment criteria <u>Form: Oral test</u>	Able to create Class diagrams according to specified business needs	2%





		• Section 4.7. What's Next	simple case example					
5	Modeling a System's Logical Structure: Advanced Class Diagrams + Quiz 1	 Section 5.1. Class Relationships Section 5.2. Constraints Section 5.3. Abstract Classes Section 5.4. Interfaces Section 5.5. Templates Section 5.6. What's Next 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make advanced class diagrams from simple case examples • Quiz 1	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember <i>class</i> diagrams 2. Understand the use of the Diagram class	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test, multiple choice	Able to create Advanced Class diagrams according to specified business needs	2%
6	Bringing Your Classes to Life: Object Diagrams	 Section 6.1. Object Instances Section 6.2. Links Section 6.3. Binding Class Templates Section 6.4. What's Next 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment:	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video	By studying the basic material of object- oriented analysis students can: 1. Understand and remember object diagrams 2. Understand the use of object diagrams	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create object diagrams according to specified business requirements	2%





			• Task 1: create a diagram object from a simple case	conferencing, discussions				
			example					
7	Modeling Ordered Interactions: Sequence Diagrams	 Section 7.1. Participants in a Sequence Diagram Section 7.2. time Section 7.3. Events, Signals, and Messages Section 7.4. Activation Bars Section 7.5. Nested Messages Section 7.6. Message Arrows Section 7.7. Bringing a Use Case to Life with a Sequence Diagram Section 7.8. Managing Complex Interactions with Sequence Fragments Section 7.9. What's Next 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a sequence diagram from a simple case example	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember sequence diagrams 2. Understand the use of sequence diagrams	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create sequential diagrams according to specified business needs	2%
8	Responsibility Assignment Patterns	 The GRASP Patterns What is a pattern? Master 1 : Expert 	Form : Studying Learning methods: group discussion Case study	6x50' - Online (Online) (2x50') Asynchronous	By studying the basic material of object- oriented analysis students can:	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test <u>Form:</u> practice	Able to create communication diagrams according to specified business needs	2%





		• Master 2 : Creator	Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a communication diagram from a simple case example	 → learning video -Online (4x50') Synchronous → video conferencing, discussions 	 Understand and remember Responsibility Assignment Patterns Understand the use of Responsibility Assignment Patterns 			
9	UTS	All materials from 1-8 th weeks	Online exams	2x50'	Answer multiple choice questions online	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> online exam	Able to answer multiple choice questions online	30%
10	Responsibility Assignment Patterns	 Master 3 : High Cohesion Master 4 : Low Coupling Master 5 : Controllers Summary 	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a timing diagram from a simple case example	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understand and remember Responsibility Assignment Patterns 2. Understand the use of Responsibility Assignment Patterns	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create timing diagrams according to specified business requirements	2%
11	INHERITANCE	• Inheritance - the basics	Form : Studying	6x50'	By studying the basic material of object-	<u>Criteria:</u> Rubric, assessment criteria	Able to create interaction summary	2%





		Box Rei	Inheritance is White use The 100% Rules Substitutability The Is-A-Kind-Of Rule Example - Reusing through inheritance	Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make an overview diagram of a simple case example	 Online (Online) (2x50') Asynchronous → learning video Online (4x50') Synchronous → video conferencing, discussions 	oriented analysis students can: 1. Understanding and remembering INHERITANCE 2. Understand the use of INHERITANCE	<u>Form:</u> Oral test	diagrams according to specified business needs	
12	INHERITANCE	• • • Polymc	Problems With ance Visibility of Attributes Polymorphism Abstract Classes The Power of orphism Summary	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: create a composite structure from simple case examples	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understanding and remembering INHERITANCE 2. Understand the use of INHERITANCE	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to make compositional structure diagrams according to specified business requirements	2%





13	System Architecture -	● Diagran	The UML Package	Form : Studying	6x50'	By studying the basic material of object-	<u>Criteria:</u> Rubric, assessment criteria	Able to create component diagrams	2%
22	Architecture - Large And Complex Systems + Quiz 2	Diagram Package Heuristi Package Package Develop	Elements Inside a Why Packaging? Some Packaging cs expert High Cohesion Loose Couplings Handling Cross communication The Facade Pattern Architecture-Centric oment Example Handling Large Use The Construction	Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a component diagram from a simple case example • Quiz 2 : work on multiple choice questions	 Online (Online) (2x50') Asynchronous → learning video Online (4x50') Synchronous → video conferencing, discussions 	 by studying the basic material of object-oriented analysis students can: 1. Understand and remember the System Architecture 2. Understand the use of System Architecture 3. Understand the material from meetings 10 to 13 	<u>Form:</u> Oral test	component diagrams according to specified business requirements	270
		Phase ●	Summary						
14	Modeling States	• 108 • 109	Example Statechart State Diagram Syntax Substates 110	Form : Studying Learning methods: group discussion Case study	6x50' - Online (Online) (2x50') Asynchronous	By studying the basic material of object- oriented analysis students can:	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create packages according to specified business needs	2%





		•	Entry/Exit Events 111 Send Events	Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: create a package from a simple case example	 → learning video -Online (4x50') Synchronous → video conferencing, discussions 	 Understanding and remembering Modeling States Understand the use of Modeling States 			
15	Modeling States	• Diagrai	Guards 111 History of States 112 Other Uses for State ms 112 Summary	Form : Studying Learning methods: group discussion Case study Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a state machine diagram from a simple case example	6x50' - Online (Online) (2x50') Asynchronous → learning video -Online (4x50') Synchronous → video conferencing, discussions	By studying the basic material of object- oriented analysis students can: 1. Understanding and remembering Modeling States 2. Understand the use of Modeling States	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to make machine step diagrams according to specified business needs	2%
16	Transition To Code	• Code	Synchronizing Artifacts Mapping Designs to Defining the Methods	Form : Studying Learning methods: group discussion Case study	6x50' - Online (Online) (2x50') Asynchronous → learning video	By studying the basic material of object- oriented analysis students can:	<u>Criteria:</u> Rubric, assessment criteria <u>Form:</u> Oral test	Able to create deployment diagrams according to specified business requirements	2%





		• Code • Model •	Mapping Packages into in Java The UML Component There are Components Summary	Learning Resources: E-learning Ims.polinema.ac.id Assignment: • Task 1: make a deployment diagram from a simple case example	-Online (4x50') Synchronous → video conferencing, discussions	1. rememb To Code 2. use of T	Understand and per the Transition Understand the ransition To Code				
17	UAS	All mate	erials	Online exams	2x50'	Answer questior	multiple choice ns online	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> online exam	Able to answer multiple choice questions online	40%	





3. Project management



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE		WEIGHT	SEMESTER			
SOBJECT	CODE	COORSE COLTORE		SEIVIESTER	DATE. PREPARATION		
			(credits)/hour				
Project management	RTI214003	Expertise Informatics	2 Credits (4 Hours	4			
AUTHORIZATION	RPS Developer Le	ecturer	MMK Coordinator	Ka PRODI			
	Candra Bella Vista	a, S. Kom., MT.	Dwi Puspitasari,	Imam Fahrur Rozi, ST., MT.			
	Farid Angga Priba	arid Angga Pribadi, S.Kom., M.Kom					
	Luqman Affandi, S	uqman Affandi, S. Kom., MMSI					
	Septian Enggar Sukmana, S.Pd., MT						
	Vipkas Al Hadid Firdaus, ST,. MT						
Learning Achievement (CP)	Learning Outcom	es of Study Program Gradu	ates (CPL-Prodi)				
	S6 Working	together and having social	sensitivity and concern	for society and the enviror	oment		
	CO Intornalia		and othics	for society and the environ	incht.		
	30 IIIterriali	ze academic values, norms,	and ethics.				
	KU2 Able to d	lemonstrate independent, o	quality and measurable	performance.			
	S9 Demonst	trate a responsible attitude	towards work in the fie	eld of expertise independer	ntly.		
	Able to n	nanage resources in the for	m of time, human reso	urces, costs for developing	ICT /		
	KK5 science a	and technology products by	utilizing project manage	rement software	•		
		es Graduates charged to co					
	Learning Outcom	es diadates charged to co					





		Masterin Schedule	astering the concepts of Introduction to Project Management, Project Management Cycle, Managing Project Scope, Managing Time nedules, Managing Costs, Managing Project Quality (QMS), Managing HR, Managing Risk, Managing Communication, PDCA, Software velopment Process Standards						
Short C	ourse Descriptions	Develop	Annagement process Stan	idards. vides knowledge	and under	standing to students in managin	a project by app	lying 10 Knowledge Areas	⊳f
SHOLLC	ourse Descriptions	project n	nanagement. So t	hat the success	of a project	can be realized.	g a project, by app	nying to knowledge Aleas (7
Learnin	g Materials /	Introduc	troduction to Project Management, Project Management Cycle, Managing Project Scope, Managing Timelines, Managing Costs,						
Subject	S	Managin	Anaging Project Quality (QMS), Managing Human Resources, Managing Risk, Managing Communications. PDCA. Software Development						
-		Process S	Process Standards.						
Referer	nces	Main :							
		Kathy Sc	thy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology.						
		Supporters:							
		Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices							
Instructional Media Software : Hardware :									
Instruct	tional Media	Software	e:	Hardware :					
Instruct	tional Media	Software 1. Micros	e : soft Office	Hardware :					
Instruct	tional Media	Software 1. Micros (Word, E	e : soft Office xcel,	Hardware :					
Instruct	tional Media	Software 1. Micros (Word, E PowerPo	e : soft Office xcel, int)	Hardware :					
Instruct	tional Media	Software 1. Micros (Word, E PowerPo 2. Micros	e : soft Office xcel, int) soft Project	Hardware :					
Instruct Name o	tional Media of Lecturer	Software 1. Micros (Word, E PowerPo 2. Micros Luqman	e : soft Office xcel, int) soft Project Affandi, S. Kom., N	Hardware : MMSI					
Instruct Name o	tional Media of Lecturer	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani	Hardware : MMSI					
Instruct Name o	tional Media of Lecturer	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi Pramana	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani Yoga Saputra, S.K	Hardware : MMSI Com., MMT.					
Instruct Name o	tional Media of Lecturer	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi Pramana Yuri Ariya	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani Yoga Saputra, S.K anto, S.Kom., M.Ko	Hardware : MMSI Com., MMT. om.					
Instruct Name o Require	tional Media of Lecturer ements Course	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi Pramana Yuri Ariya	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani Yoga Saputra, S.K anto, S.Kom., M.Ko	Hardware : MMSI com., MMT. om.		Student Learning Functions	Accordent	Accordinglicator	Mainka
Instruct Name o Require Week	tional Media of Lecturer ements Course Planned Final Capa (Sub-CP-MK)	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi Pramana Yuri Ariya bility	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani Yoga Saputra, S.K anto, S.Kom., M.Ko Study material (Learning	Hardware : MMSI Com., MMT. om.	Estimated	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)
Instruct Name o Require Week	tional Media of Lecturer ements Course Planned Final Capa (Sub-CP-MK)	Software 1. Micros (Word, E PowerPo 2. Micros Luqman M. Hasyi Pramana Yuri Ariya bility	e : soft Office xcel, int) soft Project Affandi, S. Kom., N m Ratsanjani Yoga Saputra, S.K anto, S.Kom., M.Ko Study material (Learning materials)	Hardware : MMSI com., MMT. om. Learning Forms and Methods	Estimated	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)





1	Students are able to understand the concepts and terminology of software development projects Students are able to understand the roles and functions of each personnel associated with the project	Project and project management concepts and terminology Personnel in project management Sample software project	Collaborative Learning Virtual Classes	4 x 45"	Answer about project concepts and terminology and software project management Responding to the functions and roles of each personnel involved in a project Discuss examples of software projects	Task completion	Able to understand the concepts and terminology of software development projects Able to understand the roles and functions of each personnel associated with the project	3%
2	Students are able to understand processes in software project management	5 Processes in project management 10 Project management knowledge areas	Collaborative Learning Virtual Classes	4 x 45"	Answered about 5 project management processes and 10 knowledge areas Discuss about the software management process	Task completion	Able to understand the processes in software project management	3%





3	Students are able to understand integration management 1	Good integration management Making Project Charters Creating a Project	Collaborative Learning Virtual Classes	4 x 45"	Discuss about the Project Charter Discuss about the Project Management Plan	Task completion	Able to understand about integration management (integration management) 1	3%
4	Students are able to understand integration management 2	Management Plan Direction and arrangement of project work Project monitoring and controlling Project closing	Collaborative Learning Virtual Classes	4 x 45"	Discuss about setting up project work Discuss about monitoring, controlling, and project closing Carry out tasks related to integration management	Task completion	Able to understand about integration management (integration management) 2	3%
5	QUIZ 1		Online Assignments	4 x 45″	Do QUIZ 1	Accuracy of answering questions	QUIZ 1	10%





6	Students are able to understand scope management	Process in scope management WBS	Collaborative Learning Virtual Classes	4 x 45"	Discuss about WBS Carry out tasks related to scope management	Task completion	Able to understand scope management	3%
7	Students are able to understand about time management (time management)	Process in time management Network Diagrams Gantt Chart	Collaborative Learning Virtual Classes	4 x 45"	Discuss about Network Diagrams and Gantt Charts Doing tasks related to time management	Task completion	Able to understand about time management (time management)	3%
8	Students are able to understand about cost management (cost management)	The importance of cost management Process in cost management	Collaborative Learning Virtual Classes	4 x 45"	Discuss about cost management Carry out tasks related to cost management	Task completion	Able to understand about cost management (cost management)	3%
9	UTS		Online Tests	4 x 45"	Doing UTS	Accuracy of answering questions	UTS	15%





10	Students are able to understand about quality management (quality management)	The importance of quality management Process in quality management Tools and techniques in quality control	Collaborative Learning Virtual Classes	4 x 45"	Discuss about quality management Carry out tasks related to quality management	Task completion	Able to understand about quality management (quality management)	3%
11	Students are able to understand about human resource management (human resource management)	The importance of human resource management Processes in human resource management Tools and techniques in human resource management	Collaborative Learning Virtual Classes	4 x 45"	Discuss about human resource management Carrying out tasks related to human resource management	Task completion	Able to understand about human resource management (human resource management)	3%





12	Students are able to understand about communication management (communication management)	The importance of good communication management Process in communication management Methods for improving communication within projects	Collaborative Learning Virtual Classes	4 x 45"	Discuss about good communication Carry out tasks related to communication management	Task completion	Able to understand about communication management (communication management)	3%
13	Students are able to understand stakeholder management	The importance of stakeholder management Process in stakeholder management	Collaborative Learning Virtual Classes	4 x 45"	Discuss about stakeholder management Carry out tasks related to stakeholder management	Task completion	Able to understand stakeholder management	3%
14	QUIZ 2		Online Assignments	4 x 45"	Doing QUIZ 2	Accuracy of answering questions	QUIZ 2	10%





15	Students are able to understand risk management	The importance of risk management Process in risk management Risk identification	Collaborative Learning Virtual Classes	4 x 45"	Discuss how to mitigate risk Carry out tasks related to risk management	Task completion	Able to understand about risk management (risk management)	3%
16	Students are able to understand procurement management	The importance of procurement management Process in procurement management	Collaborative Learning Virtual Classes	4 x 45"	Discuss about procurement management Carry out tasks related to procurement management	Task completion	Able to understand about procurement management	3%
17	UAS		Online Tests	4 x 45"	Do UAS	Accuracy of answering questions	UAS	26%





4. Project 1



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

			-					
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION			
Level 1 Project	RTI214004	Project	2 credits/8 hours	3	Sept. 1, 2016			
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI				
	Usman Nurhasan, S	S.Kom., MT	Yuri Ariyanto, S.Kom., M.Kom.	Ir. Deddy Kusbianto	Purwoko Aji, Mmkom			
Learning	Learning Outcome	s of Study Program Graduates (CPL-P	rodi)					
Achievement				ļ				
(CP)				niniono or original fin	dia an af ath ava			
	SS Respect ti	ne diversity of cultures, views, religions	and beliefs, as well as the o	pinions or original fine	aings of others.			
	S6 Working together and having social sensitivity and concern for society and the environment.							
	PP2 Mastering	g ICT product development methods to	provide the right solutions t	hrough one or more a	application domains.			
	PP3 Mastering	g documentation techniques and qualit	ind quality assurance of ICT products.					
	PP5 Mastering	g knowledge about quality assurance ar	arance and occupational safety and health (K3) principles in ICT product development.					
	PP6 Mastering	g knowledge of oral and written commu	en communication techniques using national and international languages.					
	KK1 Able to ap	oply applied mathematics, computation	al knowledge (Algorithms, P	rogramming and Data	abases), engineering science, and			
	engineeri	ng principles in the fields of software d	evelopment (desktop, web a	nd mobile), computer	r networks and other ICT / science and			
	technolog	gy fields (vision - graphics, embedded, li	nformation Systems, Intellige	ent systems, Business	Intelligence, etc).			
	KK2 Able to identify and analyze needs, design, realize and test ICT / science and technology products.							
	KK3 Able to do	ocument and carry out quality assurance	e in every process of develo	oment. use. modificat	tion. maintenance and security of ICT /			
	science and technology products							
	KK5 Able to manage resources in the form of time, human resources, costs for developing ICT / science and technology products by utilizing							
	project management software							
	project management software							





	KU1 Abl acc KU2 Abl KU5 Abl sup KU7 Abl	le to apply log cordance with le to demonst le to make app pervising and e le to be respo	ical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in work competency standards in the field concerned. rate independent, quality and measurable performance. propriate decisions based on standard procedures, design specifications, occupational safety and security requirements in evaluating work. onsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers
	wh KU8 Abl	no are under th lle to carry out	neir responsibility. It the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.
	KU10 Ab	le to recognize	e needs, adapt and demonstrate ability to continue self-development (lifelong learning).
	Learning Ou	utcomes Gradu	uates charged to courses (CPL-MK)
	Able to appl and analyze to apply the to apply the to work toge attention to	ly the concept e needs, as wel e concept of so e concept of so ether in buildin o academic valu	of requirements engineering and its modeling with logical, critical, quality thinking as a form of solution; Able to identify Il as apply software design concepts using UML appropriately based on standard procedures and design specifications; Able oftware implementation by paying attention to resource management in the form of time, human resources, and costs; Able oftware testing as a form of ICT product quality assurance, and perform documentation on each development process; Able ing software that is not too complex by applying software engineering principles with a responsible attitude and paying lues, norms, and ethics.
Short Course Descriptions	This course s	studies the do	ocumentation of project results
Learning Materials / Subjects	Reporting ar	nd documenta	ation of project results and reporting of work results
References	Main :		
	1. Study P Level II	Program Comr Project Imple	mittee, 2013, Project Implementation and Reporting Guidelines, ementation Guidelines, Polynema, Malang.
	2. Santoso	o, Nurudin, 20)07, Project Management, Teaching Module, Polynema, Malang.
	3. Santoso Malang.	o, Nurudin, 20 5)07, Project Management Practicum, Teaching Module, Polynema,





		4. Spra editi	gue, RH and McNurlin, on, Prentice-Hall.	BC , 2002, Informa	tion Systems Mana	agement in Practice, 5	th					
		Supporte	ers:									
Instruc Media	ctional	Software	:	Hardware LCDs and	Hardware : LCDs and Projectors							
Name Lectur Requir Course	Name of Lecturer Requirements - Course											
M in g gu Ke	M in Planned Final S g gu Capability (Lea Ke (Sub- CP-MK)		Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)			
(1)	(1) (2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)			
1	Know the objectives	course	 Introduction Study objectives SAP per week Group division 	Lectures, Q&A, discussions	1x 8 x50'	 Understand the purpose of the lecture Learn to cooperate with others 	-	-	-			
2-3 Mastering various techniques		various ation s	 Making project proposals Making progress reports Making final report 	Lectures, Q&A, discussions	2x 8 x50'	 Get information about various documentation techniques 	Task completion jobsheets	Individual task	5 %			





4-5	Mastering the various jobs of information technology operators	 Computer network technician Enterprise information system management Enterprise information systems analyst etc 	Lectures, Q&A, discussions	2x 8 x50'	- Get information about the various jobs of information technology operators	Task completion jobsheets	Individual task	5%
6-7	Able to determine the work environment to be studied	 Analysis of Existing It Products Contribution of Existing It Products New It Product Design New It Product Feasibility 	Lectures, Q&A, discussions	2x 8 x50'	- Get information about the work environment that will be studied	Task completion jobsheets	Individual task	5%
8-9	UTS		UTS	2x 8 x50'		Task		25%
						completion jobsheets		





10- 11	Able to determine the types of information technology operator jobs in the work environment	 Determination of work taken Job description taken Division of work tasks 	group discussion Question and answer Group activity assessment	2x8x50'	 Learn to cooperate with others Communicating with others 	Task completion jobsheets	Group activity	5%
12- 13	Able to determine the documentation techniques used in the work of information technology operators	 Implementation of documentation techniques used Making project proposals Making progress reports 	group discussion Question and answer Group activity assessment	2x 8 x50'	 Learn to cooperate with others Communicating with others 	Task completion jobsheets	Group activity	5%
14- 15	Able to document the work of information technology operators	 Making progress reports Making final report 	group discussion Question and answer Group activity assessment	2x 8 x50 '	 Learn to cooperate with others Communicating with others 	Task completion jobsheets	Group activity	5%
16	Documentation result presentation	9. Presentation of the final report as well as the results of the project.	Presentation Question and answer Group performance assessment	2x 8 x50 '	 Learn to cooperate with others Communicating with others 	 Task completion jobsheets Presentation 	Group activity	5%





17	UAS	10.	Collection of	1X60'	-	Group activity	40%
1			documentation				
			results				









POLYTECHNIC COUNTRY POOR

MAJOR TECHNOLOGY INFORMATION PROGRAM

STUDIES : D 4 TECHNIQUE INFORMATICS

PLAN LEARNING SEMESTER (RPS)

EYE STUDYING	CODE	clump SUBJECT	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION
Business Intelligence	RTI214005	Eye Studying Skill	2 credits/ 4 O'clock	4	1 1 February 202 2
AUTHORIZATION	Lecturer Developer	RPS	Coordinator RMK	Ka STUDY PF	ROGRAM
	1. Banni Satria And	loko, S. Kom . , M.MSI, Dr.	Bi Puspitasari, S. Kom., M. Kom.	Priest Fahrur	rozi, ST., MT.
	Eng.				
	2 Farid Ango Doro	anal C Kam M Kam			
	Z. Fariu Anga Persi	Jiidi, S. Koffi., IVI. Koffi.			
	3. Ershad Arif Mas	hudi , S. Kom., M. Kom.			
	4. Vit Zuraida, S. K	om . M. Kom			
Achievements Learning (CP)	Achievements Lear	ning Graduate of Program S	Studies (CPL-Prodi)		
	S8 Internalize a	cademic values. norms. and	ethics.	_	
	KU2 Able to dem	onstrate independent, qual	ity and measurable performance.		
	PP1 Mastering t	ne concepts of applied math	ematics, basic ICT knowledge (Algorith	ims, Programm	ing, Databases, computer
	networks, e	tc.), engineering science, an	d engineering principles in the ICT field	l in depth.	
	PP7 Mastering k	nowledge about technologic	cal developments and the latest issues	(ethical, social,	legal and economic) related to the
	ICT field.				
	KK1 Able to appl	y applied mathematics, com	nputational knowledge (Algorithms, Pro	ogramming and	Databases), engineering science,
	and enginee	ring principles in the fields o	of software development (desktop, we	b and mobile),	computer networks and other ICT /
	science and	technology fields (vision - g	raphics, embedded, Information Syster	ms, Intelligent s	systems, Business Intelligence, etc).





	KK6 Able to use the latest technology related to the field of ICT / science and technology to present information technology solutions.
	KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise
	and in accordance with work competency standards in the field concerned.
	Achievements Learning Graduate of Which charged on eye college (CPL-MK)
	Able to master the basic concepts of data warehouse as well as ETL concepts and components in depth, taking into account
	technological developments and the latest issues related to the ICT field; Able to design a data warehouse structure by applying
	logical, critical, quality, and measurable thinking; Able to carry out ETL data processes from several data sources to a data
	warehouse database that has been designed independently with a responsible attitude and pays attention to academic norms
	and ethics; Able to use tools to visualize data as a solution for problem solving analysis; Able to apply knowledge of the basic
	concepts of data warehouse and ETL in software development.
Description Short Eye Studying	In this course, concepts and techniques for designing a large quantity of data storage media will be taughtWhich referred to
	as Data warehouse, following How method For fill it with data Which originate from various
	type source data, at once serve it.
Material Learning/Principal	Draft Base Data Warehouse
Discussion	Draft ETL & Component Solution Data Warehouse
	Data Warehouse Fundamentals, ETL Concepts & Components, Data Warehouse Solutions, Data Warehouse Schema Design, ETL
	Logic Execution (SQL Server Integration Services), ETL Logic Execution Automation (SQL Server Agent), Complex ETL Logic Design
	(SQL Server Data Tools), Control Flow & Data Flow, Advanced Tasks, Variables and Event Handler, Extracting Data Source &
	Load to Dimension Table, Transform, Load to Fact Table, Multi-type Data Source, Visualization







Transformer and the second sec	MALANG S INFORMATIC STUDY PROC	STATE POLYTE ON TECHNOLOGY DE GRAM : D4 INFORMA	CHNIC EPARTMENT ATICS ENGINEERIN	NG									
	SEMESTER LEARNING PLAN (RPS)												
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION								
Computer network	ork RTI214006 Core Courses		2 credits/3 hours	3	August 13, 2021								
AUTHORIZATION	RPS Developer Le	cturer	MMK Coordinator	Ka PRODI									
	Arief Prasetyo, S.k Yuri Ariyanto, S.Ko Kadek Suarjuna Ba Sofyan Noor Arief,	Kom., M.Kom. om., M.Kom. atubulan, S.Kom., MT SST., M.Kom.	Maybe Astiningrum, ST., M.Kom.	Priest Fahru	r rozi, ST., MT.								
Learning Achievement (CP)	Learning Outcom	es of Study Program Gradua	ates (CPL-Prodi)										
	Knowledge Maste Mastering basic IC networks, etc.) to	ry Learning Achievements: T knowledge (basic algorith solve existing ICT problems.	ms, data structures and r	nanipulation,	programming languages, databases, computer								
	Learning Outcom	es Graduates charged to cou	urses (CPL-MK)										
	 Mastering the concept of Network Communication, Protocol, Model, Address, Application Layer, Application Protocol, Transport Layer, Network Layer, IPv4, Subnetting, Data Link Protocol, Physical Layer. Able to explain the concept of communication in Computer Networks, how network protocols work, the use of Network Modeling and Computer Network Addressing (C2) 												
	• Able to ex	plain basic commands in ro	uter configuration. (C2)										
	Able to im	plement IPv4 network addr	ressing and subnetting. (C	(3)									





Short Co	ourse Descriptions	In this Computer Networkin Model, Application Layer, Tr LAN Network Planning will b	ng course, an introduction to Computer Networks, communication on computer networks, OSI Model & TCP Fransport Layer, Network Layer, Network Addressing, Data Link Layer, Physical Layer, Ethernet Standards, be discussed. and router configuration introduction.								
Learnin	g Materials / Subjects	Network Communication, P Subnetting, Data Link Protoc	rotocol, Model, Add col, Physical Layer, F	ress, Applic Router basic	ation Layer, Applicati configuration.	on Protocol, Transpo	rt Layer, Network Layer	, IPv4,			
Referen	ces	Main : 1. James F. Kurose & K 2. Cisco Systems, Inc." Supporters:	eith Ross, "Compute CCNA Exploration I:	er Networki Network Fi	ng : A Top-Down App <i>Indamentals"</i> . Indiar	proach Featuring the napolis: Cisco Press, 2	Internet" Addison-Wesle 2007	≥y, 2011			
Instruct	ional Media	Software :	Hardware :	Hardware :							
Nama a	flocturor	OS - WINDOWS, MS. OFFICE WEB BROWSER, WireShark, PacketTracer	, LCDs and Pr	LCDs and Projectors							
Roquiro	monte Cource										
M in g gu Ke	Planned Final Capabi (Sub- CP-MK)	lity Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)			
1	 students can explain role and influence of data communication computer networks everyday life. (C2) students can explain elements that make 	n the 1. Basic of Communication n & 2. Protocol 3. Model/Layered n the Use	 Form : [Synchronou s Online] Material Explanation (1x50) [Asynchrono 	1x 3x50'	 Students learn about the basics of computer networks 	Criteria: Precision and mastery Form of assessment: • Active group	 Accuracy explains the role, influence of communication and provides examples of computer network 	5			





	 computer network and explain the use of network protocols. (C2) students can explain the advantages of using the OSI and TCP layered models as well as the basic functions of each layer (C2) 		 Network addressing 	● Rer Lea Virt wit lean mo	us Online] Learning video (1x50) [Synchronou s] discussion and discussion (1x50) Method : mote Blended trning (RBL): tual Classroom h Zoom, rning videos d online dules in LMS		-	Students discuss the role and influence of computer networks in everyday life.	discussion includes asking and answering (affective)	•	applications in life Able to explain again the basis of communication, devices and network forming media.		
2-3	students can explain the functions, processes that occur and the types of protocols that exist in the upper layers of the OS and TCP models (C2)	1.	Application - Interface between networks Client-Server and Peer-to-peer Application and Service layer protocols: • DNS • WWW and HTTP • E-mail • FTP • DHCP • File Sharing	• 1. 2. 3. 4.	Form : [Synchronou s Online] Material review (2x30) [Synchronou s Online] Material explanation (2x50) [Asynchrono us Online] Learning videos (2x20) [Synchronou s Online]	2x3x50'	-	Students learn about various protocols at the upper layers of OSI and TCP Students discuss about Client Server and Peer to Peer	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering (affective)	•	Be able to mention application functions as user interfaces and network infrastructure as well as types of application models. Be able to mention several network protocols and their uses appropriately	5	





4	students can explain the	Telnet I. Uses of the	discussion and Q&A (2x50) • Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and online modules in LMS • Form :			Criteria:	• Be able to	
	functions & roles of the Transport layer, as well as the TCP and UDP protocols. (C2)	Transport Layer 2. Transport Layer Protocol Type 3. Port Address	 [Synchronou s Online] Material review (1x30) [Synchronou s Online] Material Explanation (1x50) [Asynchronou us Online] Learning video (1x20) [Synchronou s Online] discussion and Q&A (1x50) Method : Remote Blended Learning (RBL): 	1x3x50'	 Students learn about the transport layer Students discuss TCP and UDP 	Precision and mastery Form of assessment: • Active group discussion includes asking and answering (affective)	 mention the function of the transport layer Be able to mention the protocols that exist in the transport layer Be able to explain the different transport layer protocols Be able to explain the addresses used in the transport layer 	5





5	students can explain the	1. Address	Virtual Classroom with Zoom, learning videos and online modules Criteria: • Form : Criteria:	
	functions of the Network layer, addressing, and routing functions (C2)	 Encapsulation Routing Decapsulation Network Laye Protocol IPv4 protocol 	1. [Synchronou s Online] Material review (1x30) Precision and mastery and explain the tasks of the Network layer 2. [Synchronou s Online] Material Explanation (1x50) - Students learn about - Able to mention the protocol at the protocol at layer 3. [Asynchronou us Online] Learning video (1x20) - Students learn about and answering (affective) Iayer 4. [Synchronou us Online] discussion and Q&A (1x50) 1x3x50' - Students discuss addressing and routing functions • Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and online modules in LMS - Students discuss addressing and routing functions - Students discuss addressing and routing functions - Students discuss addressing and routing functions	





6	Quiz 1	From meeting 1 to 5	Written/Online Test	1x2x50'			Answer questions correctly	25
7-8	students can understand and explain the structure and type and use of IPv4 addresses on the network (C2)	 IPv4 address IPv4 Types and Uses Calculation and Allocation of IPv4 for the network 	 Form : [Synchronou s Online] Material review (2x30) [Synchronou s Online] Material explanation (2x50) [Asynchronou us Online] Learning videos (2x20) [Offline] Practice Questions (1x50) [Synchronou s Online] discussion and Q&A (1x50) [Synchronou s Online] discussion and Q&A (1x50) Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and 	2x3x50'	 Students learn about IPv4 addressing Students discuss the use of IPv4 Students practice addressing networks using IPv4 	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering (affective) • Accuracy of Answers from practice questions (Cognitive)	 Able to mention and explain the function of the fields in the IPv4 structure Able to mention various types and uses of IPv4 Able to calculate and allocate IP addresses on networks with subnetting. 	5




			online modules in LMS					
9	UTS / Quiz 2	From meeting 1 to 8	Written/online test	1x2x50'			Answer Questions Correctly	25
10-11	students can explain the role of the DataLink layer of the OSI model, the physical addressing of network devices and network topology logically. (C2)	 Network Media Access Service Local Media Transfer Control DataLink Layer Frames Connecting the Upper Layer to the Media Data Link Layer Protocol Physical Addressing Network Topology 	 Form : [Synchronou s Online] Material review (2x30) [Synchronou s Online] Material explanation (2x50) [Asynchrono us Online] Learning videos (2x20) [Synchronou s Online] discussion and Q&A (2x50) Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and online modules in LMS 	2x3x50'	 Students learn about the Data Link Layer Students discuss hardware physical addresses and network topology 	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering (affective)	 Able to redefine the functions/tasks of the Data Link layer Be able to explain the structure of the frame protocols/standa rds that exist at the Data Link layer Able to explain various kinds of network topologies 	5





12	students can explain the physical media used in computer network communications, the protocols and services that exist at the physical layer and the use of signal bits that represent <i>data</i> <i>frames.</i> (C2)	 Communication Signals Signaling and Coding Physical Media 	 Form : [Synchronou s Online] Material review (1x30) [Synchronou s Online] Material Explanation (1x50) [Asynchronou us Online] Learning video (1x20) [Asynchronou s Online] discussion and Q&A (1x50) Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and online modules in LMS 	1x3x50'	 Students learn about the physical layer Students discuss services on the physical layer and the use of bit signals 	Criteria: Precision and mastery Form of assessment: • Active group discussion includes asking and answering (affective)	 able to explain the various forms of communication signals able to explain and give an example of the use of encoding bits in transmission Able to mention and explain the criteria of various physical network media 	5	
		12		1x2x50'			Correctly	20	
14	students can identify and explain media requirements, connection types, devices needed to	 Selection of Physical Connections - 	 Form : 1. [Synchronou s Online] Material 	1x 3x50'	 Students learn about the construction 	Criteria: Precision and mastery	 Able to mention the determining factors in the selection of 	5	





	build a computer network (C2)	2. 3. 4.	devices and their selection factors Selection of LAN and WAN topologies Address Allocation Subnet Calculation	2. 3. 4. 5. Ren Lea Virt witi lean ana mot	review (1x30) [Synchronou s Online] Material Explanation (1x50) [Asynchrono us Online] Learning videos (2x20) [Offline] Practice Questions (1x30) [Synchronou s Online] discussion and Q&A (1x20) Method : note Blended rning (RBL): ual Classroom h Zoom, rning videos l online dules in LMS		-	of computer networks Students discuss case studies of building a computer network Students practice subnet calculation questions	Form of assessment: • Active group discussion includes asking and answering (affective) • Accuracy of answers to practice questions (Cognitive)	•	network devices and connection types Be able to allocate IP addresses and calculate subnets in problems		
15-16	students can explain how to use and configure basic routers and static routing (C2)	1. 2.	Cisco IOS IOS Configuration and Mode Files	• 1.	Form : [Synchronou s Online] Material review	2x3x50'	-	Students learn about routers Students discuss	Criteria: Precision and mastery Form of	•	Able to mention basic commands used in router configuration	5	





1.7	1145	 Basic IOS Command Structure Network Connectivity Testing 	 (2x30) 2. [Synchronou s Online] Material explanation (2x50) 3. [Asynchrono us Online] Learning videos (2x20) 4. [Offline] Practice Questions (1x50) 5. [Synchronou s Online] discussion and Q&A (1x50) Method : Remote Blended Learning (RBL): Virtual Classroom with Zoom, learning videos and online modules in LMS 		 Various types of routers Students practice questions about router configuration 	 Active group discussion includes asking and answering (affective) Accuracy of answers to practice questions (cognitive) 	 Able to mention router configuration files Able to mention the commands in testing network connectivity 		
1/	UAS	16	Test	1x2x50'			correctly	30	





7. Computer Network Practicum

A STREET ST	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D 4 INFORMATICS ENGINEERING SEMESTER LEARNING PLAN (RPS)										
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION						
Computer Network Practicum	RTI214007	Core Courses	2 credits/4 hours	3	September 1, 2021						
AUTHORIZATION	RPS Developer Lect	turer	MMK Coordinator	Ka PRODI							
	Sofyan Noor Arief	, S.ST, M.Kom.	Maybe Astiningrum, ST., M.Kom.	Priest Fahrur	rozi, ST., MT.						
Learning Achievement (CP)	Learning Outcomes	s of Study Program Graduates	(CPL-Prodi)								
	S8 Internalize	academic values, norms, and	ethics.	J							
	KU2 Able to der	monstrate independent, qualit	y and measurable perfe	ormance.							
	KK1 Able to app	ply applied mathematics, com	putational knowledge (Algorithms, Pro	ogramming and Databases), engineering						
	science, an	id engineering principles in the	e fields of software deve	elopment (des ambedded Inf	ktop, web and mobile), computer networks						
	Business Ir	itelligence. etc).	cius (vision graphics, (indedded, ini	ormation systems, menigent systems,						
	KU1 Able to ap	ply logical, critical, innovative,	quality, and measurable	e thinking in ca	arrying out specific work in their field of						
	expertise a	and in accordance with work co	ompetency standards ir	the field cond	erned.						
	Learning Outcomes	s Graduates charged to course	es (CPL-MK)								
	Able to apply data of	communication principles on c	omputer networks and	LAN working p	principles						
Short Course Descriptions	In this course stude	nts are guided to understand	the basic architecture o	f computer ne	tworks, network standard equipment, installation						
	and configuration, u	use of equipment, use of netw	ork utility software, des	sign based on i	network addressing and its implementation, and						
	troubleshooting ne	twork problems.									





Learning Materials / Subjectsunderstand the basic architecture of computer networks, standard network equipment, installation and configuration, use of equipment, use of network utility software, design based on network addresses and their implementation, and troubleshooting network problems.									uipment, blems.	
References Instructional Media		Main 1. Ja 2. C 3. " Supp	Vain : I. James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011 2. Cisco Systems, Inc." CCNA Exploration I: Network Fundamentals". Indianapolis: Cisco Press, 2007 3. "Ubuntu Server Guide ". Creative Common ShareA Like, 2010.							
Instruct	ional Media	Softw OS - V UBUN Wires	vare : WINDOWS & LINUX - NTU, WEB BROWSER, Shark, PacketTracer	Hardware : PC & LCD PROJECTOR, HUB / SWITCH, ROUTER, LAN Tester, Crimping Pliers						
Name o Require	f Lecturer ments Course	-								
M in g gu Ke	Planned Final Capal (Sub- CP-MK)	bility	Study material (Learning materials)	Lea an	rning Forms d Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)		(3)		(4)	(5)	(6)	(7)	(8)	(9)
1	Students can install the NIC into the PC and also configure the NIC to use an IP address		 NIC Installation: NIC identification Identification of PC Hardware Network Configuration and Troubleshooting 	• Le • Pi	ecture ractice	1x4x45'			 Able to identify NIC, as well as Hardware devices Able to configure NIC on PC Make a clear report of the results of the practicum 	5





2	Students know the types of cables, can prepare, use, and test UTP cables	 Kinds and Types of Network Cables Cable Straight through, Crossover, rollover LAN tester 	 Lecture Practice 	1x4x45'	-	 Be able to mention the function of various types of cables Able to make various types of network cables Able to use LAN Tester to test LAN cables Make a clear report of the results of the practicum 	5
3	Students are able to configure the NIC to obtain configuration parameters from the DHCP server	 Dynamic IP client configuration Troubleshooting Clients 	LecturePractice	1x4x45'	-	 Able to configure client to connect to DHCP server Make a clear report of the results of the practicum 	5
4	Students are able to use several Application layer protocols in the network	 DNS - dig, nslookup FTP Telnet SSH 	LecturePractice	1x4x45'		 Able to use dig & nslookup commands according to their function Able to use FTP protocol to download and upload data Able to use telnet and SSH commands 	5





						 Able to mention the protocol at the Network layer Make a clear report of the results of the practicum 	
5	Students are able to use network tools to observe how Transport layer protocols work	 TCP-3 way handshake UDP client processes Netstat and Nmap Capture and identify TCP packets with WireShark 	LecturePractice	1x4x45'		 Be able to explain the process of establishing a TCP connection Able to use Netstat and Nmap functions Make a clear report of the results of the practicum 	5
6	Students know how to troubleshoot problems with the Ping and route tools	 Workstation basic configuration View configuration results Ping utility Route utility 	LecturePractice	1x4x45'		 Able to configure workstation/client statically Able to use Ping and Route commands according to function Make a clear report of the results of the practicum 	5
7	Quiz 1	From meeting 1 to 6	Written/Online Test	1x4x45'		Answer questions correctly	5





8-9	Students can do network subnetting	 Class A subnetting Class B subnetting Class C subnetting 	Practice	2x4x45'	 Able to calculate and allocate IP addresses on networks with subnetting. Be able to implement it on real/simulated devices. 	5
					report of the results of the practicum	
10	UTS / Quiz 2	From meeting 1 to 9	Written/online test	1x4x45'	Answer Questions Correctly	10
11	Students know and can use the ping and traceroute tools to observe paths to certain hosts	Traceroute	Lecture Practice	1x4x45'	 Able to use the Traceroute command and explain the output results Make a clear report of the results of the practicum 	5
12	Students know and can use the ARP Tool	ARP	Lecture Practice		 Able to use ARP/RARP commands and explain the output results Make a clear report of the results of the practicum 	5





13	Students can configure Access Points, install wifi adapters and connect wirelessly	 Wireless Media : Installing wireless adapters Access Point Configuration wifi connection 	LecturePractice	1x4x45'	 able to install a wireless adapter on the workstation Able to configure Access point for local network Make a clear report of the results of the practicum 	5
14	Quiz 3	From Meetings 11 - 13	Writing test		Answer Questions Correctly	5
15-16	Students are able to design a local network	 Local Network Design Analysis and design of device requirements Address allocation analysis and design 	 Lecture Practice 	2x4x45'	 Able to formulate device design and requirements in building a local network Able to formulate the addressing design needed in building a local network Make a clear report of the results of the practicum 	10
17-18	Students are able to configure routers with basic commands	Router ConfigurationNamePasswordsInterfaces	Practice	2x4x45'	 Able to perform basic configuration on the router Make a clear report of the results of the practicum 	5





19	UAS	From meeting 1 to 18	Written/Online	1,2,4,6,1		Answer questions	15	
			Test	1XZX45		correctly		





8. Advanced Web Programming



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

		1			1						
SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION						
			(credits)/hour								
Advanced Web	RTI214008	Information Systems	3 credits/ 6 hours	3	February 5, 2021						
Programming											
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI							
	1. Ade Ismail S. Kor	m., M. TI	Yoppy Yunhasnawa,	Imam Fahrur Rozi, ST., MT.							
	2. Dian Hanifudin S	Subhi, S. Kom., M. Kom.	S.ST., M.Sc.								
	3. Habibie Ed Dien,	, S. Kom., MT									
	4. Kadek Suarjuna	Batubulan, S. Kom, MT									
	5. Million Ni'ma Sh	oumi, S.Kom., M.Kom									
	6. Moch. Zawarudo	din Abdullah, S.ST., M.Kom									
	7. Putra Prima Arh	andi, ST, M. Kom.									
Learning Achievement	Learning Outcome	s of Study Program Graduate	es (CPL-Prodi)								
(CP)	S8 Internalize ad	ademic values norms and e	thics	J							
	SO Demonstrate	a responsible attitude towar	ds work in the field of ex	nartica independently							
	55 Demonstrate			pertise independently.	ana amplication domaina						
	PPZ Wastering IC	i product development meth	ous to provide the right s	solutions through one or me	ore application domains.						
	KK1 Able to apply	applied mathematics, comp	itational knowledge (Alg	orithms, Programming and	Databases), engineering science, and						
	engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and										
	technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).										
	KU1 Able to apply	iogical, critical, innovative, q	uality, and measurable th	Inking in carrying out spec	ITIC WORK IN THEIR TIELD OF EXPERTISE and IN						
	accordance v	VITN WORK COMPETENCY Standa	ras in the field concerned	d.							
	KU2 Able to demonstrate independent, quality and measurable performance.										





Learning Outcomes Graduates charged	d to courses (CPL-MK)
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Able to master website-based application development methods as a problem solving solution; Able to apply website-based application development tools in the form of a Web Framework with logical, critical, and measurable thinking; Able to make quality website-based applications, with a responsible attitude, and pay attention to academic values, norms, and ethics.

Graduate Learning Outcomes that are charged to courses (CPL-MK Sub)

- Students are able **to explain** the concepts and structure of the Web Framework (C2)

- Students are able to **install** Web Framework (C1)

- Student is able explain the concept of routing , controller, view, and model in Web Framework (C2)

- Students **implement** routing and controllers on the Web Framework (C3)

- Students are able to **apply** the template engine to the Web Framework (C3) view

- Students are able to do layouts in the Web Framework (C3) view

- Students are able to make connections to databases , schema migrations , and seeders (C 6)

- Students are able to create case studies (C6)

- Students **explain** the concept of authentication with Web Framework (C2)

- Students are able to make registration and login forms (C6)

- Students **explain** the concepts of ORM and ORM with relational databases (C2)

- Students are able to perform CRUD operations with ORM and CRUD operations with relations on ORM (C6)

- Students are able to upload files with the Web Framework (C3)

- Students are able to build reporting features (C3)

- Students explain the concept of RESTful (C2)

Students are able to build token authentication on RESTful API and CRUD with RESTful API (C3)





	- Students build projects based	on selected case studies (C6)					
	- Students present the results	tudents present the results of projects that have been done (C3)					
Short Course	This course provides an under	standing and mastery of the concept and use of web frameworks.					
Descriptions							
Learning Materials / Subjects	Basic Web Framework, MVC, A	Authentication, Object Relational Mapping (ORM), CRUD and RESTful API.					
References	Main :						
	Muhammad Azamuddin, Hafic	Mukhlasin, 2019. Laravel the PHP framework for web artisans, Kungfu Koding.					
	Supporters:						
	1. Laravel Documentatio	1. Laravel Documentation - https://laravel.com/docs/ 8 .x					
	2. Dayle Rees, 2016. Lara	vel: Code Smart. Leanpub					
Instructional Media	Software :	Hardware :					
	5. PHP	PCs/Laptops					
	6. MySql						
	7. Laravel						
	8. Composer						
	9. Git						
	1. Ade Ismail S.Kom., M.TI						
Name of Lecturer	1. Ade Ismail S.Kom., M.	ΤΙ					
Name of Lecturer	 Ade Ismail S.Kom., M. Dian Hanifudin Subhi, 	TI S.Kom., M.Kom.					
Name of Lecturer	 Ade Ismail S.Kom., M. Dian Hanifudin Subhi, Habibie Ed Dien, S. Ko 	TI S.Kom., M.Kom. m., MT					





Requi Week	rements Course Planned Final Capability (Sub-CP-MK)	 5. Milyun Ni'ma Shoumi, S.Kom., M.Kom 6. Moch. Zawaruddin Abdullah, S.ST., M.Kom 7. Putra Prima Arhandi, ST, M.Kom. Study material (Learning Forms and Methods Methods Methods Kernel Student Learning Experience Kernel Student Student Criteria & Forms 						
1	 (2) Students are able to explain the concept of Web Framework (C2) Students are able to install Web Framework (C1) Students are able to describe the structure of the Web Framework (C2) 	 (•) Web Frameworks: Introduction to Web Frameworks Installing Web Frameworks Web Framework Structure 	(4) Form : Practice - Online (Online) (1x50') Asinkron → video pembelajaran - Online (online)(1x50') Sinkron → Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 : Installing Web Framework and observing the structure of Offline Web Framework (4x50')	(3) 1X3X50" - Online (<i>Online</i>) (1x50') Asynchronous→ video pembelajaran - Online (<i>online</i>) (1x50') Sync→ video conference, diskusi - Structured task (1x50')	 (9) By studying the Web Framework students can: 4. Understand the concept of Web Framework 5. Installing Web Frameworks 6. Understand the structure of the Web Framework 	 (7) Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective) 	 (o) Knowing about the concept of web framework Complete the web framework installation process Understand the structure of the web framework 	5%
2	 Student is able explain Web Framework (C2) routing concept 	Controllers & Routing: - Understanding of routing	Form : Practice - Online (<i>Online</i>) (1x50') Asynchronous→ video pembelajaran	1 x 6 x 50"	By studying Controller & Routing students can:	Criteria: Precision and mastery	 Knowing about the concept of routing web framework Complete the process of creating the routing web 	5%





	 Students apply routing on the Web Framework (C3) Students are able to describe the controller concept (C2) Students are able to implement controllers on the Web Framework (C3) 	 Routing implementation Understanding of controllers 	- Online (<i>online</i>) (1x50') Sync → Vcon , diskusi Learning methods: <i>Problem Based Learning (</i> <i>PBL</i>) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 2 : Create a static website with a <i>Company</i> <i>Profile</i> case study (4x50') <i>Offline</i>		 Understand the concept of routing web framework Implement web routing framework Understanding web framework controllers Implement a web framework controller 	Form of assessment: Practice Active discussion includes asking and answering (affective)	•	framework Knowledge of web framework controllers Completed the creation of a web framework controller		
3	 Students explain the concept of views in the Web Framework (C2) Students are able to apply the template engine to the Web Framework (C3) view Students are able to do layouts in the Web Framework (C3) view 	View - Introduction to views - engine templates - Layouts	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 3 : Modify the view on the Company Profile case study using the Offline template engine (4x50').	1 x 6 x 50"	 By studying the view students can: 1. Understand the concept of view web framework 2. Applying the template engine to the web framework view 3. Doing the <i>layout</i> on the view 	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	•	Knowing about the concept of view web framework Completed the implementation of the template engine in the view web framework Completed the layout process in the view web framework	5%	





4	 Students are able to explain the concept of models in the Web Framework (C2) Students are able to make a connection to the database (C 6) Students are able to make schema migrations (C 6) Students are able to make seeders (C 6) 	Model: - Introduction to models - Introduction to migration - Introduction to seeding	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 4 : Development of Company Profile using data connected to Offline (4x50') database	1 x 6 x 50"	 By studying the Web Framework model students can: 5. Understand the concept of web framework models 6. Establish a connection to the database 7. Create seeder schema migrations 	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	 Knowing about the concept of the web framework model Finish establishing a connection to the database Completed schema migration creation Completed seeder creation 	5%
5	- Students are able to create case studies (C6)	Quiz 1	Form : Practice - Online (Online) Learning methods: Problem Based Learning (PBL) Assignment: Task 5 : Implement case studies by utilizing the concepts of routing, controllers, and views	1 x 6 x 50"	Quiz	Criteria: Assessment rubric Form of assessment: • Developed application • Clarity in describing the application being developed	Quiz	10%
6	 Students explain the concept of authentication with Web Framework (C2) 	Authentication: - Authentication - Registration Form	Form : Practice - Online (<i>Online</i>) (1x50') Asynchronous→ video pembelajaran	1 x 6 x 50"	By studying web framework authentication students can:	Criteria: Precision and mastery	 Knowing about the concept of web framework authentication Completing the creation of 	5%





	 Students are able to make a registration form (C6) Students are able to create a login form (C6) 	- Login Form	- Online (<i>online</i>) (1x50') Sync → Vcon , diskusi Learning methods: <i>Problem Based Learning (</i> <i>PBL</i>) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 6 : Implementation of authentication in the web admin case study by adding <i>Offline registration</i> <i>forms and login forms</i> (4x50')		1. 2. 3.	Understand the concept of web framework authentication Create a registration form Create login forms	Form of assessment: Practice Active discussion includes asking and answering (affective)	•	the registration form Completed the creation of the login form		
7	 Students explain the concept of ORM (C2) Students are able to perform CRUD operations with ORM (C6) 	ORMs: - Introduction to ORMs - CRUD with ORMs	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 7 : Implementation of ORM on Web Framework with Offline web admin case study (4x50').	1 x 6 x 50"	By frar 1. 2.	studying the web nework students can: Understand the concept of ORM web framework Perform CRUD operations with ORM	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	•	Knowing about the concept of ORM web framework Completing CRUD operations with ORM	5%	





8	- Students are able to create case studies	UTS	Form : Practice	1 x 6 x 50"	UTS	Criteria: Assessment rubric	UTS	10%
			Learning methods: Problem Based Learning (PBL) Assignment: Task 8 : Implement case studies by utilizing the concepts of routing, controllers, views, authentication, register and login features, and CRUD operations			 Form of assessment: Developed application Clarity in describing the application being developed 		
9	 Students are able to explain ORM concept with relational database (C 2) Students are able to perform CRUD operations with relations in ORM (C6) 	Data Management: - User management - Data management	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 9 : Making web admin features for CRUD with Offline (4x50') relations	1 x 6 x 50"	 By studying the web framework students can: 3. Understand the concept of Web Framework 4. Installing Web Frameworks Understanding structure 	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	 Completed the creation of user management Completing the creation of data management 	5%





10	 Students are able to upload files with the Web Framework (C3) Students are able to build reporting features (C3) 	Upload and Reporting: - Upload files - Reporting	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 10 : Making features for uploading and reporting. (4x50') Offline	1 x 6 x 50"	 By studying uploading and reporting students can: 1. Upload files with web framework 2. Build reporting features 	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	•	Completed the web framework file upload process Complete implementation of reporting features	5%
11	 Students explain the concept of RESTful (C2) Students are able to build token authentication on RESTful API (C3) Students are able to build CRUD with RESTful API (C3) 	RESTful APIs: - Introduction to RESTful APIs - Authenticate with a RESTful API token - Build a CRUD RESTful API	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 11 : Build an Offline (4x50') RESTful API project	1 x 6 x 50"	 By studying RESTful API students can: 1. Understand the concept of RESTful API 2. Building token authentication on a RESTful API 3. Building CRUD with RESTful APIs 	Criteria: Precision and mastery Form of assessment: • Practice • Active discussion includes asking and answering (affective)	•	Knowing about the concept of RESTful API Completed token authentication build on RESTful API Completed CRUD build with RESTful API	5%





						I			
12	- Students are able to create case studies (C6)	Quiz 2	Form : Practice - Online (Online) Learning methods: Problem Based Learning (PBL) Assignment: Task 12 : Implement case studies by utilizing the concepts of routing, controllers, and views	1 x 6 x 50″	Quiz	 Criteria: Assessment rubric Form of assessment: Developed application Clarity in describing the application being developed 	Quiz	10%	
13 – 16	- Students build projects based on selected case studies (C6)	Project	Form : Practice - Online (Online) (1x50') Asynchronous→ video pembelajaran - Online (online) (1x50') Sync→ Vcon , diskusi Learning methods: Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 3 : Building projects in groups based on selected case studies (4x50') Offline	1 x 6 x 50"	Project	Criteria: Precision and mastery Form of assessment: • Practice • Suitability of the project with the case study • Completion of project features according to the case study	Complete project development based on selected case studies	20%	
17	 Students present the results of projects that have been done (C3) 	UAS	Form : Practice - Online (<i>Online</i>)	1 x 6 x 50"	Presentation	Criteria: Precision and mastery	Presentation	15%	





	Learning methods: Project Based Learning (PjBL)	Form of assessment: Project presentation	
	Assignment: Task 14 : Presenting the projects that have been built in groups		





Computational Statistics



MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

		SEMESTER LEARNING PLAN	I (RPS)				
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION		
Computational Statistics	RTI214003	Basic Informatics	2 credits/4 hours	4	February 11, 2022		
AUTHORIZATION	RPS Developer Lecture	r	MMK Coordinator	Ka PRODI			
	Muhammad Afif I	Hendrawan, S.Kom., MT	Maybe	Imam Fahrur Rozi,	ST, MT		
	• Dr. Rakhmat Aria	nto, S.ST., M.Kom	M. Kom.				
	Elok Nur Hamdan	a, ST, MT					
Learning Achievement	Learning Outcomes of	Study Program Graduates (CPL-Prodi)					
(CP)	• S8 : Intern	nalizing academic values, norms, and ethics.					
	• S9: Demonstrate	a responsible attitude towards work in the field of exp	ertise independently.				
	• PP1: Mastering the concepts of applied mathematics, basic knowledge of ICT (Algorithms, Programming, Databases, Computer Networks, etc.), engineering science, and engineering principles in the field of ICT in depth.						
	• PP4: Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.						
	• KK4: Able to utiliz products.	e intelligent computing in the process of solving probl	ems based on analysi	s and information or	n ICT / Science and Technology		





	KU2: Able to demonstrate independent, quality and measurable performance.							
	Learning Outcomes Graduates charged to courses (CPL-MK)							
	Understand the basic concepts of statistics.							
	Mastering the techniques of collecting and presenting data.							
	Understand trends in the concentration and distribution of data.							
	Understand the concept of opportunity							
	• <i>sampling</i> techniques .							
	Mastering the concept of hypothesis.							
	Understand the concept of regression.							
Short Course Descriptions	In the computational statistics course, students will learn the basic concepts of statistics. Students are also taught to be able to collect and represent data using software. Furthermore, in this course, students will be taught how to process the data that has been collected. In this course, students will also be equipped with the knowledge to analyze data. In addition, in the computational statistics course students are also accustomed to using software to process and analyze data.							
Learning	Introduction to statistics							
Subjects	Data collection							
	Data presentation							
	Data centralization							
	Data distribution							
	Probability							
	Distribution							
	• sampling							
	hypothesis							





	Regression								
References	Main :								
	1. Walpole, Rona	ld E. Raymond H. Myer	s, 2007, Probabilit	y & Statistics fo	or Engineers & Scient	ists, 8th Edition, Pre	ntice-Hall Inc.		
	2. Fosyth, David,	2018, Probability and S	Statistics for Comp	uter Science, S	pringer				
	Supporters:								
	1. Kadir, 2015, Ap	plied Statistics: Conce	pts, Examples and	Data Analysis v	with the SPSS/Lisrel P	Program in Research	, 3rd Edition, Rajawali Pe	ers.	
	2. Widarjono, Agus, Applied Statistics with Excel and SPSS, UPP STIM YKPN, 2015								
Instructional	Software :	Software :							
Media	OS – WINDOW	•	Computer						
	Ms. Excel		•	• LCD					
	Jupyter Notebo	ook (Virtual Laboratory	·) •	Projector					
	• Git								
Name of Lecturer	Muhammad Afif	Hendrawan, S.Kom., M	IT						
	• Dr. Rakhmat Aria	nto, S.ST., M.Kom.							
	Elok Nur Hamdan	ia, ST, MT							
Requirements									
Course	Dispand Final	Ctudu motorial		Fatimated		A	Accessment Indicator	Deting	
week	Capability (Sub-CP-MK)	(Learning materials)	and Methods	time	Experience	Criteria & Forms	Assessment indicator	Weight (%)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1	 Students understand and can explain the 	1. Understanding statistics	Small Group Discussions	1x4x50'	Students can interact directly and share	 Question and answer 	Able to re- explain the	1 %	





2	 basic concepts of statistics Students are able to distinguish between descriptive and inferential statistics Students know the use of computational statistics in general Students understand the meaning of data 	 Types of statistics The benefits o computationa statistics in various fields Definition of data 	Virtual Class Small Group Discussions	knowledge related to the basic concepts of statistics and their use1x4x50'Students can actively explain opinions about	Question and answer	 basic concepts of statistics Be able to distinguish between descriptive statistics and inferential statistics Able to give examples of the application of computational statistics in various fields Able to explain the definition of data 	1.5 %
	 Students are able to distinguish the types of data Students know data collection techniques 	 Data types Data collection technique 	• Virtual Class	data concepts. In addition, students can exchange opinions about data concepts.	Task completion	 Able to find examples for each type of data Able to explain general data collection techniques 	
3	Able to apply data collection techniques	 Primary data and secondar data 	Problem Based Learning	1x4x50' Students can independently apply data collection	Task completionPresentation	 Able to apply data collection techniques 	1.5 %





			 Virtual Class 		techniques according to the problems given		according to the problem	
4	Quiz 1	QUIZ	Problem Based Learning	1x4x50'	QUIZ	QUIZ	QUIZ	15 %
5	 Students are able to understand the meaning of data centering Students are able to understand and apply the mean, median, mode 	 Definition of data centering Means Median mode 	 Discovery Learning Virtual Class 	1x4x50'	Students are able to apply the concept of data centering to a problem	 Question and answer Task completion 	 Students are able to explain the meaning of data centering Students are able to apply mean, median, and mode calculations to real problems 	1.5 %
6	 Students are able to explain the concept of data distribution Students are able to explain and apply range, variance, and standard deviation calculations Students are able to understand the tendency of data 	 The basic concept of data distribution Measures of data distribution (range, variance, standard deviation) Symmetric and asymmetric 	 Discovery Learning Virtual Class 	1x4x50'	Students are able to find the function and utilization of data distribution on a problem	 Question and answer Task completion 	 Able to define the distribution of data Able to measure the distribution of data Able to apply the concept of data distribution 	1.5 %





	centers on data distribution	distribution of data						
7	 Students are able to understand the concept of opportunity Students are able to understand calculation techniques in the concept of probability (permutations and combinations) Students master the concept of set 	 Definition of opportunity Calculation techniques in odds Set concept 	 Small Group Discussions Virtual Class 	1x4x50'	Students interact and share knowledge related to lecture topics	 Question and answer Task completion 	 Understand the concept of opportunity Understand the technique of calculating odds opportunity calculation Understand the concept of sets 	1.5 %
8	UTS	UTS	Problem Based Learning	1x4x50'	UTS	UTS	UTS	20 %
9	 Students are able to apply probability calculation techniques Students are able to apply Bayesian rules 	 Opportunity calculation technique application Bayes Rule 	 Small Group Discussions Virtual Class 	1x4x50'	Students can discuss lecture topics	 Question and answer Task completion 	 Able to apply probability calculation techniques Understand Bayes' rule 	1.5 %





10	 Students are able to apply the normal distribution Students are able to apply the concept of discrete distribution 	• Normal Distribution	 Discovery Learning Virtual Class 	1x4x50'	Exercises and assignments	 Question and answer Task completion 	 Able to apply Bayes' rule Able to read normal tables Be able to state the probability and shaded area after finding the Z value from the table Students are able to solve discrete distribution problems 	1.5 %
11	 Students are able to understand the concept of population Students are able to understand the sample concept Students are able to understand the sample concept Students are able to understand sampling techniques 	 Population Concept Sample Concept Sampling technique 	 Small Group Discussions Discovery Learning Virtual Class 	1x4x50'	 Students share experiences related to the topic given Students are able to practice sampling techniques 	 Question and answer Task completion 	 Students understand the concept of population and sample Students understand sampling techniques Students are able to apply sampling techniques 	1.5 %





	 Students are able to apply sampling techniques 							
12	QUIZ 2	QUIZ	Problem Based Learning	1x4x50'	QUIZ	QUIZ	QUIZ	15 %
13	 Students understand Confidence Intervals Students are able to understand the basic concept of a hypothesis Students are able to understand the steps of hypothesis testing 	 Confidence Intervals Hypothesis testing steps 	 Small Group Discussions Virtual Class 	1x4x50'	Students can discuss lecture topics	 Question and answer Task completion 	 Able to determine Confidence Interval and apply it to the Normal table Able to do hypothesis testing by applying the correct testing steps 	1.5 %
14	 Students understand the types of hypotheses 	 One Way Hypothesis Two Way Hypothesis 	 Small Group Discussions Virtual Class 	1x4x50'	Students can discuss lecture topics	 Question and answer Task completion 	 Able to apply one-way and two-way hypothesis testing 	
15	 Students understand and are able to apply techniques to 	 Simple regression analysis 	 Small Group Discussions 	1x4x50'	Students can discuss lecture topics	 Question and answer 	 Able to apply simple 	1.5 %





	perform simple regression analysis		 Virtual Class 			Task completion	regression calculations	
16	 Students understand and are able to apply techniques to perform multiple regression analysis 	 Multiple regression analysis 	 Small Group Discussions Virtual Class 	1x4x50'	Students can discuss lecture topics	 Question and answer Task completion 	 Able to apply multiple regression calculations 	1.5 %
17	UAS	UAS	Essay Exam	1x4x50'	UAS	UAS	UAS	30 %

Information :

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5th semester Technopreneurship

1. Project 2



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION			
Project 2	RTI205002	Expertise Courses	3 credits / 6 hours	5	August 30, 2021			
AUTHORIZATION	RPS Developer Lecturer		MMK Coordinator	Ka PRODI				
	1. Deddy Kusbia	into PA, Ir., M.Mkom.	Yuri Ariyanto,	Imam Fahrur Rozi, ST., MT.				
			S.Kom., M.Kom.					
	2. Pramana rog	a Saputra, S.Kom., Mini I.						
	3. Yuri Ariyanto,	, S.Kom., M.Kom.						
	4. Maybe Astini	ngrum, ST., M.Kom.						
	5. Eka Larasati A	Amalia, S.ST., MT.						
	6. Dhebys Surya	ni, S.Kom., MT						
	7. Yan Watequli	s Syaifuddin, ST., M.MT.						
Learning Achievement (CP)	Learning Outcom	es of Study Program Gradu	ates (CPL-Prodi)					
	S5 : Respect the d	iversity of cultures, views, r	eligions and beliefs, as v	– vell as other people's origi	nal opinions or findings.			
	S6 : Working toge	ther and having social sensi	tivity and concern for so	ciety and the environmen	t.			
	S8 : Internalizing a	academic values, norms, and	d ethics.					





S9: Demonstrate a responsible attitude towards work in the field of expertise independently. **PP2**: Mastering ICT product development methods to provide the right solutions through one or more application domains. **PP3** : Mastering documentation techniques and quality assurance of ICT products. **PP5**: Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT product development. **PP6** : Mastering knowledge of oral and written communication techniques using national and international languages. **KK1**: Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). **KK2** : Able to identify and analyze needs, design, realize and test ICT / science and technology products. KK3 : Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / Science and Technology products **KK5** : Able to manage resources in the form of time, human resources, costs for the development of ICT / science and technology products by utilizing project management software KU1: Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in the field of expertise and in accordance with work competency standards in the field concerned. **KU2** : Able to demonstrate independent, quality and measurable performance. KU3 : Able to study cases of the application of science and technology that pays attention to and applies humanities values according to their field of expertise in order to produce prototypes, standard procedures, designs or works of art, compile the results of their studies in the form of working papers, design specifications, or art essays, and upload them on the college website. KU4 : Be able to compile the results of application case studies in the area of expertise possessed in the form of working papers, design specifications, or art essays, and upload them on the college website. **KU5**: Able to make appropriate decisions based on standard procedures, design specifications, occupational safety and security requirements in supervising and evaluating work. **KUG**: Able to maintain and develop a network of cooperation and results of cooperation within and outside the institution. **KU7**: Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers under their responsibility. **KU8** : Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently. **KU10** : Able to recognize needs, make adaptations and demonstrate ability to continue self-development (lifelong learning). Learning Outcomes Graduates charged to courses (CPL-MK) Able to apply software engineering principles and software project management according to best practice through a one semester long project, which includes proposal preparation, project planning, software design and implementation, testing, quality control, and user delivery





Short Course Descriptions	Project 2 courses are Capstone courses where s	tudents can implement and integrate course materials that are applied to make a product							
	according to the correct project management s	tages.							
Learning Materials /	Formation of project group A, preparation of pr	oject proposal A, evaluation of proposals and design of product A, evaluation of results of							
Subjects	implementation of product A, evaluation of res	ults of implementation and testing of Product A, evaluation of product results A, formation of							
	groups and preparation of project proposals B,	evaluation of project proposals B, evaluation progress of Product B (design), Evaluation of							
	progress of product B implementation (Version	Control System + prototype), Evaluation of progress and implementation of product B							
	(product), Evaluation of progress of product B (testing), Evaluation of Product B results + peer Assessment							
References	Main :								
	1. Shit, Daniel. 2012. Needs Analysis in Soj	ftware Engineering. Yogyakarta: Andi.							
	2. Heryanto, Priest., Triwibowo, Totok. 20	13. Information Technology-Based Project Management . Bandung: Informatics.							
	3. Tantara, Rudy. 2012. Information Systems Project Management . Yogyakarta: Andi.								
	4. The references are from the last 5 years and some are in English								
	5. Each team is expected to get 1 reference	ce							
	Supporters:								
	1.								
Instructional Media	Software :	Hardware :							
	1. Video conferencing	1. PCs / laptops							
	2. Collaboration Tools								
	3. Development Tools								
	4. Browsers								
Name of Lasturar	1 Doddy Kuchianto DA Ir MAkam								
	2. Pramana Yoga Saputra, S.Kom., MMT.								
	3. Yuri Ariyanto, S.Kom., M.Kom.								





	4	. Maybe Astinin	grum, ST., M.Kom.					
	5	. Eka Larasati Ar	malia, S.ST., MT.					
	6	. Dhebys Suryar	ii, S.Kom., MT					
	7							
	/	. Yan watequis	Syairuddin, ST., MI.MT.					
Require	ements Course R	FI194004 – Projec	zt 1				1	_
Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Able to build a team to work on software development projects Understand project lecture content 2 	Lecture explanation Formation of Project group A	Lecture Group discussion Case study Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (<i>Online</i>) (2x50') - ASK (4x50")	Giving assignments to students to form project teams	-	-	0 %
2	 Able to explain project description A Understand how to prepare software project proposals 	Preparation of Project proposals A	Lecture Group discussion Case study Activity: • Online face to face or also known as virtual face to face (TMD)	1X6X50" - Face to Face Online (<i>Online</i>) (2x50') - ASK	Giving assignments for preparing software project proposals	-	-	0 %





			Collaborative asynchronous online activities (ASK)	(4x50")				
3	 Able to compile project proposal A according to the rules of software proposal documents Able to explain project proposal A that has been made 	Evaluation of proposals	Group discussion Case study Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Conduct discussions to prepare a project proposal A Explaining the project proposal A to the supporting lecturer	Proposal evaluation rubric	 Project background (importance) Originality (idea, uniqueness) Explanation of the problem Methods/technology to solve problems Project impact Project planning (schedule, HR, and budgeting if necessary), Software platform used (explanation about the technology and why use them), Target customer(s) Baselines Experience 	5%
4	 Able to arrange project design A in accordance with 4 design aspects (architecture, functional workflow, database, UI) Able to explain the design of project A that has been made 	Product design evaluation A	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")		Design assessment rubric	 System Architecture Functional Workflows Databases UI 	10%




5	• Able to implement (make program code, create database, create UI) in accordance with the design of project A that has been made	Product Implementation Progress A	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Practice implementing program code creation, database creation and UI creation	-	-	0 %
6	 Able to explain the results of the implementation of project A that has been implemented 	Evaluation of product implementation and testing results A	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Students explain the results of implementing project A	Implementation assessment rubric	 Implementation according to the target Punctuality Realization of features are all realized Feature implementation success rate Use of collaboration tools Dev tools Use of reusable code UI efficiency UI consistency UI attractiveness 	10%
7	Able to explain the results of project A	Evaluation of Product results A	Group discussion Case study Project Base Learning (PjBL)	1X6X50" - Face to Face Online (Online)	Students explain the results of the products that have been made in project A to the supporting lecturers	Evaluation Assessment Rubric	Team 1. Error Handling	5%





				(0			-		1	1
	products that have			(2x50')			2.	Job Distribution		
	been made		Activity: • Online face to face or	- ASK			3.	Presentation content		
			also known as virtual face to face (TMD)	(4x50")			4.	Submission of Presentations		
			 Collaborative asynchronous online 				5.	Answer the question		
			activities (ASK)				6.	Manual Book		
							Individu	al		
							1.	Fulfilling a Role in a Team		
							2.	Sharing Work in Teams		
							3.	Listen to the suggestions of colleagues in the Team		
8	 Able to build a team to work on software development projects Understand project lecture content Able to explain project description B Understand how to prepare software project proposals 	Formation of Project Group B and Preparation of proposals	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Giving assignments to students to form project teams	-	-		0 %	





9	 Able to compile project proposal B according to the rules of software proposal documents Able to explain project proposal B that has been made 	Evaluation of Project B proposal	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Giving assignments for preparing software project proposals	Proposal evaluation rubric	10%
10	 Able to design project B according to 4 design aspects (architecture, functional workflow, database, UI) Able to explain the design of project B that has been made 	Evaluation of the progress of Product B (design)	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Conduct discussions to compile project B designs, Practice making project B designs	Design assessment rubric	10%
11	Able to implement (make program code, create database, create UI) according to project B design that has been made	Evaluation of the progress of implementation of Product B (Version Control System (GitHub etc.) + prototype)	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Practice implementing program code creation, database creation and UI creation		0





12	Able to implement (make program code, create database, create UI) according to project B design that has been made	Evaluation of the progress of implementation of Product B (product)	 Collaborative asynchronous online activities (ASK) Group discussion Case study Activity: Online face to face or also known as virtual face to face (TMD) Collaborative asynchronous online activities (ASK) 	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Practice implementing program code creation, database creation and UI creation	-	-	0 %
13	Able to implement (make program code, create database, create UI) according to project B design that has been made	Evaluation of the progress of implementation of Product B (product)	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Practice implementing program code creation, database creation and UI creation	•	-	0 %
14	Able to explain the results of the implementation of project B that has been implemented	Evaluation of the progress of implementation of Product B (product)	Group discussion Case study Project Base Learning (PjBL) Activity:	1X6X50" - Face to Face Online (Online) (2x50') - ASK	Students explain the implementation results to the supporting lecturers	Implementation assessment rubric	 Implementation according to the target Punctuality Realization of features are all realized 	25%





			 Online face to face or also known as virtual face to face (TMD) Collaborative asynchronous online activities (ASK) 	(4x50")			 Feature implementation success rate Use of collaboration tools Dev tools Use of reusable code UI efficiency UI consistency UI attractiveness 	
15	Able to explain the results of testing using project B testing tools that have been implemented	Evaluation of the progress of Product B (testing (tools testing)	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Conduct discussions, practice testing			10%
16	Able to explain the evaluation results of project B that has been implemented, and conduct peer assessments	Evaluation of Product B results + peer assessment	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")		-	-	0 %





			Collaborative asynchronous online activities (ASK)						
17	Able to explain the results of project B products that have been made	Evaluation of Product B results + peer assessment	Group discussion Case study Project Base Learning (PjBL) Activity: • Online face to face or also known as virtual face to face (TMD) • Collaborative asynchronous online activities (ASK)	1X6X50" - Face to Face Online (Online) (2x50') - ASK (4x50")	Each group explains the results of project B products to the supporting lecturers	Evaluation Assessment Rubric	Team 1. 2. 3. 4. 5. 6. Individual 1. 2. Listen to f	Error Handling Job Distribution Presentation content Submission of Presentations Answer the question Manual Book Fulfilling a Role in a Team Sharing Work in Teams the suggestions of es in the Team	15%





Mobile Programming



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE.
					PREPARATION
MOBILE	RTI20	Expertise Courses	3 Credits / 6 Hours	5 (Five)	February 6 , 2021
PROGRAMMING	5003				
AUTHORIZATION	RPS Dev	veloper Lecturer	MMK Coordinator	Ka PRODI	
	Arie Ra	chmad Syulistiyo,	Dwi Puspitasari, S.Kom., M.Kom.	Imam Fahrur Rozi, ST, MT	
	S.Kom.I	M.Kom.			
	Putra Prima Arhandi, ST., M.Kom.				
	M.Kom				
	Dian Ha	nifudin Subhi,			
	S.Kom.,	M.Kom.			
Learning	Learnin	g Outcomes of Study	Program Graduates (CPL-Prodi)		
Achievement (CP)				J	
	S8 In	ternalize academic va	lues, norms, and ethics.		
	S9 D	emonstrate a respons	ible attitude towards work in the field of exper	tise independently.	
	PP2 M	lastering ICT product of	development methods to provide the right solu	itions through one or more application doma	ins.
	KK1 A	ble to apply applied m	athematics, computational knowledge (Algorit	hms, Programming and Databases), engineer	ing science, and
	er	ngineering principles i	n the fields of software development (desktop	, web and mobile), computer networks and of	ther ICT / science and
	te	chnology fields (visior	- graphics, embedded, Information Systems, I	ntelligent systems. Business Intelligence. etc)	
	KU1 A	ble to apply logical, cr	itical, innovative, guality, and measurable think	king in carrying out specific work in their field	of expertise and in
	a(cordance with work o	competency standards in the field concerned		
	KI12 Δ	hle to demonstrate in	dependent quality and measurable performan	re	
	NOL A		acpendent, quality and measurable performan		





Learning Outcomes Graduates charged to courses (CPL-MK)

Able to understand programming concepts on mobile devices; Able to master ICT product development methods to provide the right solutions through mobile-based applications; Able to apply logical and critical thinking in developing mobile-based applications according to the various case studies given; Able to use mobile-based application development tools independently with a responsible attitude, and still pay attention to academic values, norms, and ethics.

Graduate Learning Outcomes that are charged to courses (CPL-MK Sub)

- Students are able to explain the flutter SDK installation process on the operating system used (C2)
- Students are able to create a hello world project and run the application to the emulator / device they have, and are able to create a Git repository for the hello world project that is made (C6)
- Students are able to explain the basics of Flutter Programming, create widget trees and compile flutter applications (C2, C6)
- Students are able to explain the basics of Flutter Programming and create flutter applications on the basis of dart programming (C2, C6)
- Students are able to distinguish statefulWidget and statelessWidget (C2)
- Students are able to explain and map data to widgets, custom list items, styling containers, text, time, and theming (C2, C3)
- Students are able to create applications that connect to other pages using the navigator, and create functions that can pass data from one page to another (C6)
- Students are able to create applications that can receive input from the user and can process data according to the action chosen by the user (C6)
- Students are able to create applications using widgets, custom widgets, and mapping data to widgets, as well as applications that can retrieve data from the server (C6)
- Students are able to explain about JSON (C2)
- Students are able to create applications that can create, update and delete data from the server (C6)
- Students are able to explain No SQL and can create applications that can get and create data on the server (C2, C6)
- Students are able to explain and implement HTTP in Flutter, and can create applications that can update and delete data on the server (C2, C3)
- Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)





Short Course Descriptions	Mobile Programmin course students are	g provides knowledge and understanding as well as how to make products in the form of mobile applications so that in this able to design and implement a mobile application product on popular mobile devices.
Learning Materials / Subjects	 An Introduct Case study c A case study 	tion to Mobile Programming Using Flutter of the Simple Mobile Application Quiz Project v of the Simple Mobile Expense Manager Project
	 Case Study of Case Study of 	of Project Mobile Adaptive UI of Project Mobile with Multiple Screens
	 Project Shop Case Study I 	Project with native android features
References	Main : 18. Flutter & Dart - Supporters: 1. Alessandria, S. (Publishing Ltd. 2. Biessek, A. (201 Publishing Ltd. 3. Napoli, ML (201 4. Syaifuddin. (202	The Complete Guide [2021 Edition] (https://www.udemy.com/course/learn-flutter-dart-to-build-ios-android-apps/) 2020). Flutter Projects: A practical, project-based guide to building real-world cross-platform mobile applications and games . Packt 19). Flutter For Beginners An Introductory Guide to Building cross-platform Mobile Applications with Flutter and Dart 2 . Packt 9). Beginning Flutter A Hands On Guide To App Development . https://doi.org/10.1002/9781119550860 22). Android learning teaching module book
Instructional	Software :	Hardware :
Media	Visual Studio Code Flutter SDK Android Emulators	PCs/Laptops Android smartphones
Name of Lecturer	 Putra Prima Dian Hanifu 	Arhandi, ST., M.Kom din Subhi, S.Kom., M.Kom.





	3	Arie Rachmad S	yulistiyo S.Kom.M.Ko	m.				
Requirem Course	ients R	IF193008- Object Base	ed Programming					
Week	Planned Fina Capability (Sub-CP-MK	al Study material (Learning) materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students are able to explain the flutter SDI installation process on the operating system used (C2) Students are able to make hello world projects and r applications to the emulator / device they have. (C6) Students are able to create Git repository for the created hello world project (C6) 	 Install Flutter SDK on Windows Operating System Install Visual Studio Code Install Git Emulator Configuration Android Device Configuration Create and publish the git project hello world repository to github. 	Form : Studying Learning methods: Problem Based Learning (PBL) group discussion Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 : 1. Install and configure Visual Studio Code for Flutter development and build hello world app until it runs successfully to emulator (3 x50') Offline 2. Create and publish a hello world repository to github (1x50') Offline	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying installation and configuration materials as well as hello world students can : 5. Understand and remember how to install Flutter SDK 6. Create a simple hello world project. 7. Running hello world project to emulator or real device. 	Criteria: Scoring criteria rubric Form of assessment: • Practice • Active discussion includes asking and answering (affective)	 Mastery of the Flutter Installation Process The accuracy of creating a hello world project using Flutter Accuracy of project publication to github 	1.5%





2	 Students are able to explain the basics of Flutter Programming (C2) Students are able to make tree widgets and compile flutter applications (C6) 	 Get to know widgets Create widget trees Compile the flutter application 	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 2 : Create a simple UI with the widgets that have been described. The UI created consists of images, lists, text.	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying the basics of programming with flutter students can : 1. Get to know and understand widgets in flutter 2. Create a simple UI consisting of images, text and lists 	Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective)	 Mastery and understanding of widgets in flutter Create widget trees 	1.5%
3	 Students are able to explain the basics of Flutter Programming (C2) Students are able to make flutter applications based on dart programming (C6) Students are able to differentiate statefullWidget and 	 Create a flutter application based on dart programming Understand the basic state Understand and the difference between statefulWidget and statelessWidget Create a flutter application using statefulWidget and statelessWidget 	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 3 : make a temperature converter application from	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying the basics of programming with flutter students can : 1. Know and understand the basic programming of darts 2. Create a flutter project that implements statefullWidget and statelessWidget 3. Understand the basic state 	Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective)	 Understand the difference between statefulWidget and statelessWidget Implements statefullWidget 	1.5%





	statelessWidget (C2)			Celsius to Kelvin and Reamur.					
4	 Students are able to explain and map data to widgets (C2, C3) Students are able to explain and create custom list items (C2, C3) Students are able to explain and create container, text, time, and theming styling (C2, C3) 	•	Understanding and mapping data to widgets Understand and create custom list items Understand and create container, text, time styling Understanding and creating Theming	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 4 : edit the application in the jobsheet by adding a model according to the data to be displayed	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By learning widget content , styling and application logic with Flutter : 1. Able to create applications using various kinds of widgets in Flutter 2. Able to create applications related to data in flutter 	 Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective) 	 Implement several kinds of widgets Processing data and displaying it in the flutter application 	1.5%
5	Quiz 1	•	Able to explain how to install flutter, upload projects to git, create widgets, and customize widgets	Form : Quiz Learning methods: Interview Learning Resources: E-learning Ims.polinema.ac.id Assignment: Quiz 1	2X4X50 " - Online (<i>online</i>) (4x50') Sync → - Structured Assignments , Quizzes (4 x50')	QUIZ 1	QUIZ 1	QUIZ 1	10%
6	 Students are able to create 	•	Create applications that	Form : Studying	2X4X50 "	By studying Navigation and Multiple Screen materials with Flutter :	Criteria: Scoring criteria rubric	Implement the navigator	1.5%





	 applications that connect to other pages using the navigator (C6) Students are able to create functions that can pass data from one page to another (C6) 	 connect with other pages using the navigator Create a function that can pass data from one page to another 	Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 5 : 1 . edit the jobsheet so that you can paste other data based on the case given. 2 . create functions for other data that need to be pasted to other pages	- Online (Online) (2 x50') Asynchronous → learning videos - Online (online) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 Able to create applications using navigator in flutter Able to create flutter applications that can paste data between pages in flutter 	 Form of assessment: Practice Active discussion includes asking and answering (affective) 	 Processing data and displaying it in the flutter application 	
7	 Students are able to create applications that can receive input from the user (C6) Students are able to create applications that can process data according to the action 	State Management and User Input	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 6 : 1. edit the jobsheet so that it can receive data from the user	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying State Management and User Input material : 1. Able to create applications that can process user input 2. Able to make the application take action according to the action chosen by the user 	Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective)	 Implement user input Processing data and displaying it in the flutter application 	1.5%





	chosen by the user (C6)		according to the case given. 2. Create an application that can take action according to the action chosen by the user					
8	Students are able to create applications using widgets, custom widgets, and mapping data to widgets (C6)	UTS	Form : UTS Learning methods: Practice Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Create applications by utilizing widgets, custom widgets, and mapping data to widgets	2X4X50 " - Online (<i>online</i>) (4x50') Asynchronous → learning videos - Structured task (4 x50')	UTS	UTS	UTS	25%
9	 Students are able to create applications that can retrieve data from the server (C6) Students are able to explain about JSON (C2) 	Http Request, User Auth and Animation	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 7 :	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying Http Request material , User Auth and Animation : 1. Able to create applications that can get data from the server and display it on the Flutter application 	 Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective) 	 Getting data from the server Processing data and displaying it in the flutter application 	1.5%





			edit the jobsheet so it can fetch data from the server.					
10	Students are able to create applications that can create, update and delete data from the server (C6)	Http Request, User Auth and Animation	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 8 : edit the jobsheet so that you can create, update and delete data from the server according to the given case .	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying Http Request material , User Auth and Animation : 1. Able to create applications that can create, update and delete data from the server and display it on the Flutter application 	Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective)	 Create, update and delete data from the server Processing data and displaying it in the flutter application 	1.5%
11	 Students are able to explain No SQL (C2) Students can create applications that can get and create data on the server (C6) 	Firestore	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id	2X4X50 " - Online (Online) ($2 \times 50'$) Asynchronous \rightarrow learning videos - Online (online) ($2 \times 50'$) Sync \rightarrow video conferencing, discussions - Structured task ($4 \times 50'$)	 By studying the Firestore material : 1. Able to create applications that can get and create data from the server on flutter applications 	 Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective) 	 get and create data from server Processing data and displaying it in the flutter application 	1.5%





			Assignment: Task 9 : edit the jobsheet so that you can get and create data on the server according to the given case .					
12	Students are able to explain and implement HTTP in flutter (C3)	Quiz 2	Form : Quiz Learning methods: Interview Learning Resources: E-learning Ims.polinema.ac.id Assignment: Quiz 1	2X4X50 " - Online (<i>online</i>) (4x50') Sync → - Structured Assignments , Quizzes (4 x50')	QUIZ 2	QUIZ 2	QUIZ 2	10%
13	Students are able to create applications that can update and delete data on the server (C3)	Firestore	Form : Studying Learning methods: Group discussion Case study Problem Based Learning (PBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 10 : edit the jobsheet so that you can update and delete data on the	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying the Firestore material : 1. Able to create applications that can update and delete data from the server on the Flutter application 	Criteria: Scoring criteria rubric Form of assessment: • Practice • Active discussion includes asking and answering (affective)	 update and delete data on the server Processing data and displaying it in the flutter application 	1.5%





			server according to the					
14	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks	Form : Studying Learning methods: Group discussion Case study Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 1 : create a flutter application consisting of user auth and cloud storage using the selected case study	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	By studying the project material : 1. Able to create flutter applications consisting of user auth and storage in the cloud	Criteria: Scoring criteria rubric Form of assessment: • Practice • Active discussion includes asking and answering (affective)	 create a flutter application consisting of user auth and storage in the cloud Processing data and displaying it in the flutter application 	5%
15	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks	Form : Studying Learning methods: Group discussion Case study Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 2 : create a flutter application consisting of user auth and cloud storage	2X4X50 " - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying the project material : 2. Able to create flutter applications consisting of user auth and storage in the cloud 	 Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective) 	 create a flutter application consisting of user auth and storage in the cloud Processing data and displaying it in the flutter application 	5%





			using the selected case study					
16	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks	Form : Studying Learning methods: Group discussion Case study Project Based Learning (PjBL) Learning Resources: E-learning Ims.polinema.ac.id Assignment: Task 1 3 : create a flutter application consisting of user auth and cloud storage using the selected case study	2X4X50 " - Online (Online) (2 x50') Asynchronous → learning videos - Online (online) (2 x50') Sync → video conferencing, discussions - Structured task (4 x50')	 By studying the project material : 3. Able to create flutter applications consisting of user auth and storage in the cloud 	Criteria: Scoring criteria rubric Form of assessment: Practice Active discussion includes asking and answering (affective)	 create a flutter application consisting of user auth and storage in the cloud Processing data and displaying it in the flutter application 	5%
17	UAS	UAS	Form : UAS Learning methods: Interview Learning Resources: E-learning Ims.polinema.ac.id Assignment: UAS	2X4X50 " - Online (<i>online</i>) (4x50') Sync → - Structured assignments , UAS (4 x50')	UAS	UAS	UAS	25%





Machine Learning (YET)





Software Testing



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM: D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION	
SOFTWARE TESTING	RTI205005	Software engineering	2 credits/ 4 hours	5	July 6, 2021	
AUTHORIZATION	RPS Developer Le	cturer	MMK Coordinator	Ka PRODI		
	Muhammad Afif H	endrawan, S.Kom., MT	Putra Prima Arhandi,	Imam Fahrur Rozi, ST, MT		
	Muhammad Shull	an Khairy, S.Kom., M.Kom.	ST., M.Kom.			
Learning Achievement (CP)	Learning Outcom	es of Study Program Graduate	es (CPL-Prodi)			
	S8 Interna	lize academic values, norms,	and ethics.			
	S9 Demor	strate a responsible attitude	towards work in the fiel	d of expertise in	dependently.	
	PP1 Master	ing the concepts of applied m	athematics, basic ICT kr	nowledge (Algori	thms, Programming, Databases, computer	
	netwo	ks, etc.), engineering science,	and engineering princip	ples in the ICT fie	eld in depth.	
	PP2 Master	ing ICT product development	methods to provide the	the right solutions through one or more application domains.		
	PP3 Master	ing documentation technique	es and quality assurance	of ICT products.		
	PP5 Master develo	ing knowledge about quality a oment.	assurance and occupatic	onal safety and h	ealth (K3) principles in ICT product	





	КК1 КК3 КU2	 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to document and carry out quality assurance in every process of development, use, modification, maintenance and security of ICT / science and technology products Able to demonstrate independent, quality and measurable performance. 					
Short Course Descriptions	Learning Able to docume indepen solution academ In softw	g Outcomes Graduates charged to courses (CPL-MK) master the concepts and methods of testing software in depth as a form of quality assurance/quality of ICT products; Able to intation and carry out quality assurance in every process of developing, using, modifying, and maintaining ICT/IPTEKS product idently with a responsible attitude; Able to use supporting software to create software testing scenarios automatically as the i through one or more application domains; Able to analyze software testing in a measurable manner by taking into account ic values, norms and ethics.	o make ts right learn				
	softward basic so equippe	software testing methods such as white box and black box testing as the basic foundation of software testing methods. After knowing the basic software testing methods, students learn to use supporting software to create test scenarios automatically. Students are also equipped with the ability to make software test results reports.					
Learning Materials / Subjects	1. So 2. So 3. So 4. Te 5. Sc 6. Au	ftware Testing Flow ftware Testing Methods ftware Testing Planning <i>st Cases</i> <i>enario Test</i> Itomated Software Testing					





		7. Reporting of Software Testing Results								
Referen	Wallit. Myers, GJ; Sandler, C. & Badgett, T. (2012), The art of software testing , John Wiley & Sons , Hoboken and NJ Supporters: 1. Sommerville, I. (2016). Software Engineering, 10th edition. Essex: Pearson. 2. IEEE Computer Society. (2014). SWEBOK, Guide to the Software Engineering Body of Knowledge version 3.0. IEEE. Instructional Media Software:									
Instructi	ional Media	Software:	Hardware:							
		 Presentation tools TextEditor selenium Cypress 	1. Com	puter						
Name of	f Lecturer	1. Muhammad Afif Her	idrawan, S.Kom., N	1T						
	2. Muhammad Shulhan Khairy, S.Kom., M.Kom.									
Requirements Course										
Week	Planned Final Capab (Sub-CP-MK)	ility Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)		





(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students understand the importance of software testing Students understand when implementing software testing Students understand various software approaches 	 Introduction Explanation of Tasks / Project Lecture Contract Explanation Explanation of Assessment Syllabus Explanation Explanation of software testing 	Online, Discovery learning	8 X 50″	Task	Task	 Be able to identify software testing approaches to application projects 	1.5%
2	 Students are able to understand various software approaches Students are able to distinguish between white box, black box and gray box approaches 	Overview of the types of software testing, including: •White box •Black box •Gray box	On line, Small Group Discussion, Discovery Learning	8 X 50″	Exercises and assignments	Task	 Accuracy in explaining the definition and workings of white box, black box and gray box. Be able to explain the specification requirements that must be owned by a software tester in each approach 	1.5%





							• Success in finding available automatic software according to each approach	
3	 Students are able to understand the benefits of the white box approach Students are able to understand how to do testing with a white box approach Students are able to define various techniques in the white box approach 	White Box techniques	On line, Small Group Discussion, Discovery Learning	8 X 50″	Exercises and assignments	Task	• Able to apply software testing with white box techniques	1.5%
4	 Students are able to understand the benefits of the black box approach Students are able to understand how to do testing with a black box approach Students are able to define various techniques in the black box approach 	Black Box techniques	On line, Small Group Discussion, Discovery Learning	8 X 50″	Exercises and assignments	Task	• Able to implement software testing with black box techniques	1.5%





5	 Students are able to understand and apply previous materials 	Meeting materials 1- 4	Online Quiz, Contextual Learning	8 X 50"	Case study completion	QUIZ	QUIZ	15%
6	 Students are able to understand the standard provisions of planning documents related to software testing Students are able to make document test plans 	Test Plan document	Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	 Students are able to make a test plan document Students are able to define planning data before conducting software testing. 	1.5%
7	• Students are able to define a test scenario on the software to be tested	Test Scenario document	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	• Students are able to create test scenario documents in accordance with the software to be tested.	1.5%
8	• Students are able to apply and integrate previous materials in a software testing case study.	Implementation of making software testing documents based on IEEE 829 document standards based on case studies.	On line, Contextual Learning	8 X 50"	Create official software testing documents based on real case studies	UTS	UTS	20%





9	Students	Test case document	On line	8 X 50″	Exercises and	Task	 Students are able to 	1 5%
5	are able to define test		off fine,	0,000	assignments	TUSK	create test case	1.370
	cases for each test		Small Group		assignments		documents according	
	scenario based on real		Discussion,				to existing scenarios	
	case studies.		Discovery					
	 Students Students are able to distinguish between test cases intended for successful conditions and failed conditions. Students are able to define the requirements needed to execute each test case. 		Learning, Cooperative Learning				 Students are able to define what data is needed in conducting software testing based on the test cases that are made. 	
10	 Students understand the concept of bug reporting. Students are able to understand the elements in the bug reporting document. Students are able to create bug reporting documents. 	Bug reports and bug report documents	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	 Able to create bug report documents with the required reporting elements 	1.5%
11	 Students understand the 	Testing metrics	On line,	8 X 50"	Exercises and assignments	Task	• Able to implement testing metrics using	1.5%





	concept of testing metrics • Students are able to implement testing metrics in the software testing process	 Percentage test cases executed Passed test case percentages Failed test case percentage Blocked test case percentage. Number of tests run per time period 	Small Group Discussion, Discovery Learning, Cooperative Learning				the manual testing method.		
12	 Students understand the concept of automatic testing in software testing Students know the preparations that must be made before carrying out automatic testing. Students are able to distinguish the use of automatic testing tools in software testing using white box testing and black box testing methods. 	Automatic testing concept	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	Able to mention the advantages and disadvantages of automatic testing tools on the market	1.5%	





13	QUIZ 2	Meeting materials 9 to 11	On line, Contextual Learning	8 X 50"	QUIZ	QUIZ Form Online	QUIZ	15%
14	Students are able to apply test scenarios and test cases that have been made in automatic testing tools	Implementation of automatic testing tools using Selenium / Cypress	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	Able to create test scenarios and test cases using automatic testing tools	1.5%
15	Students are able to make a test report using an automatic testing tool	Testing report using automatic testing	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Task	Able to make test reports using automatic testing tools.	1.5%
16	Students understand the concept of User Acceptance Testing	User Acceptance Testing	On line, Small Group Discussion, Discovery Learning, Cooperative Learning	8 X 50"	Exercises and assignments	Q&A in class	Able to understand the concept and application of User Acceptance Testing in the software development process.	1.5%





17	Students are able to	UAS	On line,	8 X 50"	UAS	UAS in the Form of	UAS	30%
	understand all the material presented in lectures		Contextual Learning			an Online Exam		





Indonesian → (NOT, Ms. Henny Purwaningsih)





Management information System



MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (SKS)/Hour	SEMESTER	DATE. PREPARATION			
NAGEMENT ORMATION SYSTEM	RTI205007	Core Courses	2 Credits / 4 Hours	5	26 AUGUST 2022			
HORIZATION	RPS Developer Lect	urer	MMK Coordinator	Ka PRODI				
	Farid Angga Pribadi Adevian Fairuz Prat Muhammad Unggu Priska Choirina, SST	, S.Kom., M.Kom ama, S.ST, M, Eng I Pamenang, S.ST., MT ⁻ , M.Tr.T		Imam Fahrur Rozi, ST., MT.				
rning Achievement (CP)	Learning Outcomes	of Study Program Graduates	(CPL-Prodi)					
	S8 Int	ernalize academic values, nor	ms, and ethics.					
	S9 De	monstrate a responsible attit	ude towards work in th	ne field of expertise indep	pendently.			
	PP1 Ma	PP1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, compute networks, etc.), engineering science, and engineering principles in the ICT field in depth.						
	KU2 Ab	le to demonstrate independe	nt, quality and measur	able performance.				
	Learning Outcomes	Graduates charged to course						





	Students are able to explain the role of information systems in business and how to use information systems as a competitive advantage and are able to analyze the needs of information systems in a business.
rt Course Descriptions	The Management Information Systems course is a course that teaches students about theoretical concepts about management information systems, information needs at every level in an organization, aspects of information systems in an organization.
rning Materials / Subjects	- System Basic Concepts
	- Basic Concepts of Information Technology
	- Concept of Facts, Data and Information
	- Management Information System Concept
	- Basic Concepts of Management and Organization in Management Information Systems
	- Information System Based Decision Making Concept
	- Technology Concepts in Information Systems for Management Information Systems
	- Information System Applications at Organizational Functions and Levels
	- Strategic Information Systems and Inter-Organizational Systems
	- Supporting Information System Applications in Management Information Systems
	- Database and Database Management System
	- Information and Communication Technology for Management Information Systems
	- Management Information System Development
erences	Main :
	1. Rusdiana A. and Irfan Moch. , " Management Information Systems ", Setia Library Bandung , 201 4 .
	Supporters:





ructior	nal Media	Softw	vare :	Hardware :					
			1.	1.					
ne of L	ecturer	1. Fa	arid Angga Pribadi, S.Kor	n., M.Kom					
		2. A	devian Fairuz Pratama, S	.ST, M, Eng					
		3. N	luhammad Unggul Pame	nang, S.ST., MT					
	4. Priska Choirina. SST. M.Tr.T								
roquis	equisite Courses Information Systems								
	requisite courses information systems								Deting
eek	Planned Final Capa (Sub-CP-MK)	bility	Study material (Learning materials)	Learning Forms and Methods	Estimate d time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students are ablunderstand the contents of the syllabus and lect contracts; Students are ablunderstand the concepts of the system 	e to :ure e to basic	 system essence System characteristics, design and life cycle Form, type, classification, and system actors system models 	LectureDiscussion	4 X 50"	 Listen to material from lecturers and discuss; Discussions about the basic concepts of the system are guided by presentation material from the subject lecturer 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Oral test	 Accuracy explains the basic concept of the system 	0.8 %
2	 Students are abl understand the concepts and 	e to basic	 Basic concept of information technology 	LectureDiscussion	4 X 50"	 Listen to material from lecturers and discuss; 	<u>Criteria:</u>	 Accuracy in explaining the basic concepts and 	0.8 %





	developments of information technology	• [i t	Development of information technology			 Discussions regarding the basic concepts and developments of information technology are guided by presentation material from the subject lecturer 	Accuracy in answering questions <u>Form:</u> Oral test	developments of information technology	
3	 Students are able to understand the basic concepts of facts, data and information 	 E f C T C 	Basic concept of fact Data base concept The basic concept of information	 Lecture Discussion 	4 X 50"	 Listen to material from lecturers and discuss; Discussions regarding the basic concepts of facts, data, and information are guided by presentation material from the subject lecturer 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Oral test	 Accuracy explains the basic concepts of facts, data, and information 	0.8 %
4	 Students are able to understand the concept of management information systems Students are able to understand the components and 	 1 r s 1 t r i 	The essence of management information systems The scope and benefits of management information	LectureDiscussion	4 X 50"	 Listen to material from lecturers and discuss; Discussions about the concept of management information systems are 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u>	 The accuracy of explaining the concept of management information systems Accuracy in explaining the 	0.8 %





	structure of management information systems	 systems Components and structure of management information systems 				guided by presentation materials from lecturers who teach the subject	Oral test		components and structure of the management information system		
5	 Students are able to answer quiz questions properly and correctly related to meeting material 1 - 4. 	Quiz 1 Meeting materials 1- 4	Written Exam (Multiple Choice 20 questions)	4 X 50"	•	Answer quiz questions	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Written/online test	•	Accuracy in answering questions.	12.5%	
6	 Students are able to understand the concept of organization in management information systems 	 The Nature and Concept of Management Activities in the Management function Type of management activity Oversight in Management 	 Lecture Discussion 	4 X 50"	•	Listen to material from lecturers and discuss; Discussions about the concept of organization are guided by the presentation material of the subject lecturer	Criteria: • Accuracy in answering questions • Liveliness in discussion <u>Form:</u> Oral test	•	Accuracy in explaining organizational concepts in management information systems	0.8 %	
7	 Students are able to understand the concept of 	 The basic framework for decision-making 	LectureDiscussion	4 X 50"	•	Listen to material from lecturers and discuss;	<u>Criteria:</u> • Accuracy in	•	Accuracy in explaining the concept of	0.8 %	l





				1				
	information system- based decision making	 based on information systems The basic concept of management decision making Types of management decisions Mechanisms, stages, and models of decision-making in organizations 			 Discussions regarding the concept of information system-based decision-making were guided by presentation material from the subject lecturer 	answering questions • Liveliness in discussion <u>Form:</u> Oral test	information system- based decision making	
8	UTS	UTS	Written Examination (Multiple Choice 40 questions)	4 X 50"				
9	 Students are able to understand the concept of technology and information systems for management information systems 	 The nature of technology and information systems Communication technology Information system 	LectureDiscussion	4 X 50"	 Listen to material from lecturers and discuss; Discussions regarding the concept of technology and information systems for 	Criteria: • Accuracy in answering questions • Liveliness in discussion	 Accuracy in explaining the concepts of technology and information systems for management information systems 	0.8 %




		 technology Evolution of the development and future prospects of information technology 			management information systems are guided by presentation material from the subject lecturer	<u>Form:</u> Oral test			
10	 Students are able to understand the concept of information system applications at organizational functions and levels 	 The Nature of Information Systems in Organizational Functions IS Application on Organizational Functions IS Applications at the Organizational Level ERPs and SAPs 	 Lecture Discussion 	4 X 50"	 Listen to material from lecturers and discuss; Discussions regarding the concept of information system-based decision-making were guided by presentation material from the subject lecturer 	Criteria: • Accuracy in answering questions • Liveliness in discussion <u>Form:</u> Oral test	 Accuracy in explaining the concept of information system applications at organizational functions and levels 	0.8 %	
11	 Students are able to understand the concept of strategic information systems and inter- organizational systems 	 Strategic Information System Interorganization al Information Systems Information System Supports 	 Lecture Discussion 	4 X 50"	 Listen to material from lecturers and discuss; Discussions regarding the concept of information system-based 	Criteria: • Accuracy in answering questions • Liveliness in discussion	 Accuracy in explaining the concept of strategic information systems and inter- organizational systems 	0.8 %	





		Company Strategy Use of IS in Supporting Corporate Strategy			decision-making were guided by presentation material from the subject lecturer	<u>Form:</u> Oral test		
12	 Students are able to understand the concept of supporting information systems in management information systems 	 The essence of management support information systems Management Support System Database Management System Artificial Intelligence 	 Lecture Discussion 	4 X 50"	 Listen to material from lecturers and discuss; Discussions regarding the concept of information system-based decision-making were guided by presentation material from the subject lecturer 	Criteria: • Accuracy in answering questions • Liveliness in discussion <u>Form:</u> Oral test	 Accuracy in explaining the concept of supporting information systems in management information systems 	0.8 %
13	 Students are able to answer quiz questions properly and correctly related to meeting material 9 - 12. 	Quiz 2 Meeting Materials 9- 12	Written Exam	4 X 50"	 Answer quiz questions 	<u>Criteria:</u> Accuracy in answering questions <u>Form:</u> Written/online test	 Accuracy in answering questions. 	
14	 Students are able to understand 	Database NatureDatabase	Lecture	4 X 50"	 Listen to material from lecturers 	<u>Criteria:</u>	 Accuracy describes databases and 	0.8 %





	databases and	Management	Discussion		and discuss:	• Accuracy in	datahase	
	databases and database management systems	 Nanagement System Database System Development Management of Database Systems in Management Information Systems 	Discussion		 Discussion about databases and database management systems with presentation material from lecturers who teach the subject 	 Accuracy in answering questions Liveliness in discussion Form: Oral test 	management systems	
15	 Students are able to understand information and communication technology for management information systems 	 The Nature of Information and Communication Technology Data communication Data Communication Application System Computerization 	 Lecture Discussion 	4 X 50"	 Listen to material from lecturers and discuss; Discussions on information and communication technology for management information systems are guided by presentation material from the subject lecturer 	<u>Criteria:</u> • Accuracy in answering questions • Liveliness in discussion <u>Form:</u> Oral test	 Accuracy describes information and communication technology for management information systems 	0.8 %
16	 Students are able to understand about the development of management information systems 	 The Nature of Management Information System Development 	LectureDiscussion	4 X 50"	 Listen to material from lecturers and discuss; The discussion regarding the 	Criteria: • Accuracy in answering questions • Liveliness in	 Accuracy describes the development of management information systems 	0.8 %





17	•	Implementation UAS	Written Examination (Multiple Choice 40 questions)	4 X 50″	•		•	
		 Information Systems Development Methodology and Approach Management Information System Development and Implementation Model Information System Development 			development of a management information system was guided by presentation material from the subject lecturer	discussion <u>Form:</u> Oral test		





Cloud Computing



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION			
			(credits)/hour					
Cloud Computing	BT1205008	Network and Multimedia	2 Credits/4 Hours	5	August 30, 2021			
	11205000							
AUTHORIZATION	RPS Develope	Lecturer	MMK Coordinator	Ka PRODI				
	Dian Hanifudi	i Subhi, S.Kom., M.Kom.	Dwi Puspitasari,	Imam Fahrur Rozi, ST., MT				
	Grezio Arifiyal	P., S.Kom., M.Kom.	S.Kom., M.Kom.					
	Habibie Ed Die	n, S. Kom., MT						
	Noprianto, S.k	om., MT						
Learning Achievement	Learning Outc	omes of Study Program Graduat	tes (CPL-Prodi)					
(CP)			1	J				
	S8 Interna	lize academic values, norms, an	d ethics.					
	S9 Demor	strate a responsible attitude to	wards work in the field	of expertise independently.				
	PP1 Master	ing the concepts of applied mat	hematics, basic ICT kno	wledge (Algorithms, Program	mming, Databases, computer			
	netwo	ks, etc.), engineering science, ar	nd engineering principl	es in the ICT field in depth.				
	PP7 Master	ing knowledge about technologi	ical developments and	the latest issues (ethical, so	cial, legal and economic) related to			
	the IC1	field.	·					
	KK6 Able to	use the latest technology relate	ed to the field of ICT / s	cience and technology to pr	esent information technology			
	solutio							
			Pr					
	KU2 Able to demonstrate independent, quality and measurable performance.							
	Learning Outc	omes Graduates charged to cou	rses (CPL-MK)					
	Able to master the concept of cloud computing and its services in depth by taking into account the latest technological developments and							
	issues; Able to	use devices in the form of a nun	nber of virtual machine	es as a quality and scalable so	olution, so as to produce High Availability			





	infrastructure; Able to apply co	ncepts and solutions in a cloud computing environment independently with a responsible attitude and pay nd ethics.
Short Course Descriptions	This course discusses cloud cor	nputing services, project deployment in a cloud environment.
Learning Materials / Subjects	 Cloud Environments Cloud Service laaS Virtual Cloud Networks PaaS SaaS CloudStorage Containers Cl/CD Serverless Computing High Availability 	
References	Main : <i>Tomasz, Michal., "Practical Ord</i> Supporters: 1. Ramklass, Roopesh. Or	acle Cloud Infrastructure", Apress, 2020 acle Infrastructure Architect Associate. McGraw-Hill Education, 2020
Instructional Media	Software :	Hardware :
	1. Oracle Cloud Accounts	Computer or Laptop





		2. Web Browsers						
		3. PuTTY / SSH Client						
		4. Terminal						
Name	e of Lecturer	Dian Hanifudin Subhi, S.Kom., Grezio Arifiyah P., S.Kom., M.K Habibie Ed Dien, S. Kom., MT Noprianto, S.Kom., MT	M.Kom. (om.					
Requi	irements Course							
Wee k	Planned Final Capabil (Sub-CP-MK)	ity Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weigh t (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Know and be al to explain t concept of clo computing (C1) Able to ident the characteristics cloud computi (C2) 	ole - Cloud computing he concept ud - Cloud computing characteristics ify of ng	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions,	1x4x50″	Study the concepts and characteristics of cloud computing	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	 Knowing about the concept of cloud computing Understand the characteristics of cloud computing 	1.67 %





2	- Able to know the services offered by cloud computing, especially Oracle Cloud	 OCI service category OCI core services 	Contextual Teaching and Learning (CTL) Assignment: Task 1 : • Activate Oracle Cloud Infrastructur e (OCI) account registration • Install the application (2x50') Offline Form : Studying - Online (Online) (1x50') Asynchronous → learning	1x4x50″	Learn about the various OCI service categories	Criteria: Precision and mastery Form of assessment: • Presentatio	- Know the services offered by cloud computing, especially OCI	1.67 %	
	(OCI)		video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions,			n Individual activity and group discussions include asking and answering (affective)			





			Contextual Teaching and Learning (CTL) Assignment: Task 2 : • Tried the cloud services available at OCI (2x50') Offline						
3	 Able to know OCI Compute services Able to create virtual machines (VM) in the OCI Compute service 	 OCI Compute Service Virtual machine (VM) creation 	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL)	1x4x50"	Learn about the OCI Compute service	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	-	Able to know OCI Compute services Able to create virtual machines (VMs) in the OCI compute service	1.67 %





			Assignment: Task 3 : • Create a virtual machine in OCI • Install the application (2x50') Offline					
4	 Able to know the Virtual Cloud Network service Able to make Virtual Cloud Network configuration 	 Virtual Cloud Networks Configuring Virtual Cloud Networks 	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 4 : • Perform VCN	1x4x50"	Configuring a Virtual Cloud Network on the Cloud	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	 Know the Virtua Cloud Network service Create a Virtual Cloud Network configuration 	1.67 %





			settings on the VM according to the case study (2x50') <i>Offline</i>					
5	 Able to know PaaS services on OCI Able to implement PaaS based solutions 	 Paas service concept on Oracle Cloud Infrastructure Deployment of PaaS-based solutions 	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 5 : Perform application deployment on the PaaS	1x4x50"	besigning Paas solutions on OCI	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	 Knowing Paas services on OCI Implement a PaaS based solution 	%





			platform					
			(2x50') Offline					
6	Test deployment of an Open Source project in a VM - Able to know	Quiz 1 - SaaS service concept	Quiz Form :	1x4x50"	Quiz Designing a	Quiz Criteria:	Quiz - Knowing SaaS	10%
	SaaS services on OCI - Able to implement SaaS based solutions	on Oracle Cloud Infrastructure - Deployment of SaaS-based solutions	Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 6 : • Design and build solutions on the SaaS		Saas solution on Oracle Cloud Infrastructure	Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	services on OCI - Implement a SaaS based solution	%





				platform						
				(2x50') Offling						ł
8	 Able to know Cloud Storage services Able to implement Cloud Storage- based solutions 	Cloud service con Implemen cloud solutions	Storage ncept tation of storage	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 7 : • Doing static website deployment using Offline cloud storage (2x50').	1x4x50"	Designing solutions on cloud computing with cloud storage	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	Know the Cloud Storage service Implementing a Cloud Storage based solution	1.67 %	





٩	Open Source project	STIT		1×4×50″	LITS		LITS	20%	1
9	doployment test in	015	015	174720				2070	
	VM combined with								
4.0	cioud Storage	<u> </u>	-	4 4 50"	D 1111	<u>.</u>			
10	- Able to know	- Containers concept	Form :	1x4x50″	Build images	Criteria:	 Know the concept of 	1.67	
	the concept	- Building images	Studying		using containers	Precision and	containers	%	
	of container	with containers	- Online (mastery	Duild images with		
	- Able to build	with containers	Online)				- Build images with		
	- Able to bullu		(1x50')			Form of	containers		
	indges with		Asynchronous			assessment:			
	containers		\rightarrow learning			 Presentatio 			
			video			n			
			- Online (
			online) (1x50')			Individual			
			Sync \rightarrow Vcon ,			activity and			
			discussion			group			
						discussions			
			Learning			include asking			
			methods:			and answering			
			small aroun			(affective)			
			discussions			(uncenve)			
			Contextual						
			Teaching and						
			Learning (CTL)						
			Leanning (CTL)						
			Accianmont						
			Assignment.						
			Duilding the						
			 Building the 						
			image using						
			the Offline						
			(2x50')						
			docker						
			container						





11	 Able to figure out docker compose Able to do orchestration using docker compose 	 The concept of docker compose Docker compose orchestration 	Form : Studying - Online (Online) (1x50') Asynchronous → learning video - Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 9 : Deploy using docker compose (2x50') Offline	1x4x50″	Perform orchestration using docker compose	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and group discussions include asking and answering (affective)	 Knowing docker compose Perform orchestration using docker compose 	1.67
12	 Able to know the concept of CI/CD Able to do deployment 	 CI/CD concept Deployment with CI/CD 	Studying - Online (<i>Online</i>)	1X4X5U	deployment with CI/CD concept	Precision and mastery	 Know the concept of CI/CD Doing deployment with CI/CD concept 	1.67 %





	with CI/CD		(1x50')			Form of		
	concept		Asynchronous			assessment:		
			\rightarrow learning			Presentatio		
			video			n		
			- Online (المعالية والمعال		
			online) (1x50')			Individual		
			Sync $ ightarrow$ Vcon ,			activity and		
			discussion			group		
						discussions		
			Learning			include asking		
			methods:			and answering		
			small group			(affective)		
			discussions,					
			Contextual					
			Teaching and					
			Learning (CTL)					
			Assignment:					
			Task 10 :					
			 Doing 					
			deployment					
			on cloud					
			computing					
			using CI/CD					
			(2x50')					
			Offline					
13	• Able to	Serverless Computing	Form :	1x4x50"	Designing	Criteria:	- Understand the	1.67
	understand the		Studying		solutions with	Precision and	concept of	%
	concept of		- Online (the concept of	mastery	serverless	
	Serverless		Online)		serverless	,	computing	
	Computing in the		(1x50')		computing	Form of	computing	
	Cloud (C2)		Asynchronous		Companing	assessment:	- Implementing the	
			-				concept of	





	 Able to apply the concept of Serverless Computing (C3) 		 → learning video Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 11 : offline serverless (2x50') cloud computing solution 			 Presentatio n Individual activity and group discussions include asking and answering (affective) 	serverless computing		
14	Deployment of projects using Containers	Quiz 2	Quiz	1x4x50"	Quiz	Quiz	Quiz	10%	
15	 Able to know the concept of High Availability in the cloud Able to design High 	 High Availability concept High Availability architectural design 	Form : Studying - Online (<i>Online</i>) (1x50') Asynchronous → learning video	1x4x50"	Create a High Availability solution design in the cloud	Criteria: Precision and mastery Form of assessment: • Presentatio n	 Know the concept of High Availability in the cloud Create a High Availability plan in the cloud 	1.67 %	





	Availabilty on the cloud		- Online (online) (1x50') Sync → Vcon , discussion Learning methods: small group discussions, Contextual Teaching and Learning (CTL) Assignment: Task 12 :			Individual activity and group discussions include asking and answering (affective)			
			 Design cloud solutions with high availability architecture (2x50') Offline 						
16	Project deployment presentation according to case study	Project Presentation	Form : Studying - Online (online) (4x50') Sync → Vcon , discussion Learning methods: Project	1x4x50"	Project presentation	Criteria: Precision and mastery Form of assessment: • Presentatio n Individual activity and	Conduct project deployment presentations according to case studies.	20%	





			Assignment: Big Tasks : • Conduct project presentation s based on case studies (4x50') Offline			group discussions include asking and answering (affective)			
17	Project deployment tests according to the case studies taken	UAS	UAS	1x4x50"	UAS	UAS	UAS	20%	





6th semester

1. Job Preparation English



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION
			(credits)/hour		
ENGLISH	RTI206001	Basic Informatics	2 credits/ 3 hours		
PREPARATION FOR				3	August 1, 2018
WORK					
AUTHORIZATION	THORIZATION RPS Developer Lecturer I		MMK Coordinator	Ka PRODI	
	Atiqah Nurul	Asri, S.Pd, M.Pd	Atiqah Nurul Asri,	Ir. Deddy Kusbianto P.	A, MMKom
	Farida Ulfa, S.	Pd, M.Pd	S.Pd, M.Pd		
	Satrio Binusa	S., SS, M.Pd			
Learning	Learning Out	comes of Study Program Graduates	s (CPL-Prodi)		
Achievement (CP)				ļ	
	S8 Int	ternalize academic values, norms, a			
	KU2 Ab	ole to demonstrate independent, qu	ality and measurable p	erformance.	
	PP6 M	astering knowledge of oral and writ	ten communication tec	hniques using national	and international languages.
	KU11 Ab	ole to communicate using internation	onal languages orally and	d in writing.	
	Learning Outo	comes Graduates charged to course	es (CPL-MK)		
	1. Read and	understand job advertisements.			
	2. Understar	nd the words used in job advertisem	ients.		





	3. Mention and explain the strengths and weaknesses possessed.	1
	4. Read and understand how to write a job application letter.	
	5. Write a job application letter.	
	6. Read and understand how to make a Curiculum Vitae.	
	7. Writing Curriculum Vitae.	
	8. Read and understand how to conduct a test interview and its kinds.	
	9. Practicing test interviews.	
	10.Read and understand how to make an effective presentation	
	11.Practice effective presentations	
	12.Understand how to do TOEIC [®] questions.	
	13.Practice the TOEIC [®] test.	
Short Course Descriptions	The name of this course is <i>English Informatics</i> 2 is taught to students of the Informatics Management Study Program which are focused on training their abilities and skills in preparing themselves for the world of work and taking the TOEIC [®] or PECT (Polytechnic English Competency Test) test. Methods used during the teaching and learning process include lectures, discussions, <i>role plays</i> , presentations, and individual and group projects.	
Learning Materials	1. Reading Job Advertisements	1
/ Subjects	 1.1 Assessing Yourself 1.2. Parts of Job Advertisement 1.3. Questions to Ask Yourself after Reading Job Ads 1.4. Terms and Abbreviations Usually Found in Job Advertisements 2. Writing a Job Application Letter 	
	 2.1. Things to Consider Before Writing A Job Application Letter 2.2. Online Application Letters 2.3. Job Application Letter Template 2.4. Sample of Job Application Letter 3. Writing Curriculum Vitae 	





	3.1. Things to Consider Befor	e Writing a Curriculum Vitae										
	3.2. Information a CV Should Include 3.3. Curriculum Vitae Template 3.4. Sample of CV Conducting a Job Interview 4.1. Kinds of Job Interview											
	4. Conducting a Job Interview 4 4.2 Things to Prenare before	Having a Job Interview 4.3 Things Sunnosed to Do on a D Day (of the Job Interview) 4.4. Common Questions Asked										
	by the Interviewer	naving a sob interview.s. mings supposed to be on a b bay (of the sob interview)										
	5. Delivering an Effective Preser	ntation										
	5.1. Factors Make People Irri	tated during Presentation										
	5.2. Things to Consider befor	e Presentation										
	5.3. Things to Consider in Ma	king Power Point Slides										
	5.4. Things to Do during Pres	5.4. Things to be during Presentations . Preparing for TOEIC [®]										
	o. Preparing for IUEIC "											
	6.1 Preparing for Listening Test											
	6.2 Preparing for Reading Te	6.2 Preparing for Reading Test										
References	Main:											
	Asri, Atiqah Nurul, et.al. 2018. I	English for Job Preparation : Fourth Edition. Polynema Press										
	Supporters:											
	1. Downes, Colm. 2012. Car	nbridge English for Job Hunting. Cambridge: Cambridge University Press.										
	2. Grussendorf, Marion. 20	11. Oxford English for Presentations. Oxford: Oxford University Press.										
	3. Moss, James, Lee, Clayto	n, and Atkinson, Peter. 2007. Presenting for Success. Business English Pod.										
	4. Pledger, Path. 2015. Oxford English for Human Resources. Oxford: Oxford University Press.											
	5. Trew, Grant. 2008. Tactics for TOEIC [®] Listening and Reading Strategies. Oxford: Oxford University Press.											
Instructional	Software : Hardware :											
Media		Computers, LCD Projectors, Audio and Video Files, and Speakers										
Name of Lecturer	1. Atiqah Nurul Asri, S.Pd, M.P	d										





		2. Farida Ulfa, S.Pd, M.Pc						
		3. Satrio Binusa S., SS, M.	Pd					
Requi Cours	irements Se							
Wee k	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1-2	 Read and understand job advertisement s and choose the right type of job according to your strengths and weaknesses. 	 Reading Job Advertisements Assessing Yourself Parts of Job Advertisement Questions to Ask Yourself after Reading Job Ads Terms and Abbreviations Usually Found in Job Advertisements 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion • Presentation	6 x 50 minutes	 State and explain the words used to describe strengths and weaknesses Do exercises 1, 2 and 4 in the Main Module. Understand and complete the table in exercise 3 about the phrases used to mention strengths and weaknesses. Mention and explain the strengths and weaknesses of each student in terms of <i>personal characteristics</i> and <i>qualifications</i> (<i>academic skills, skills, experiences</i>) by means of brainstorming as in exercise 1. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: presentation • Writing test: • make a summary of the advantages and disadvantages • make an analysis of job advertisements in accordance with the qualifications of each student	 Accuracy and mastery of student communication using English in: State and explain the words used to describe strengths and weaknesses Do exercises 1, 2 and 4 in the Main Module. Understand and complete the table in exercise 3 about the phrases used to mention strengths and weaknesses. Mention and explain the strengths and weaknesses of each student in terms of <i>personal characteristics</i> and <i>qualifications</i> (<i>academic skills, skills, experiences</i>) by means of brainstorming as in 	5%





	Write down students'	exercise 1.	
	 Write down students' strengths and weaknesses by using vocabulary in exercises 1, 2, and 4 and using the phrases found in exercise 3. Presenting the strengths and weaknesses of 	 Write down students' strengths and weaknesses by using vocabulary in exercises 1, 2, and 4 and using the phrases found in exercise 3. Precenting the strengths 	
	 students in front of the class. Mention and explain the parts contained in the job advertisement. 	 Presenting the strengths and weaknesses of students in front of the class. Mention and explain the parts contained in the job 	
	 Mention and explain things to ask yourself when reading a job advertisement. Completing and 	 Mention and explain things to ask yourself when reading a job advertisement. 	
	explaining the tables in exercise 5 and 6 regarding the abbreviations contained in job advertisements.	 Completing and explaining the tables in exercise 5 and 6 regarding the abbreviations contained 	
	 Match the pieces of the job advertisement with the type of job that fits the advertisement by doing exercise 7-12. 	 Match the pieces of the job advertisement with the type of job that fits the advertisement by doing everyise 7.12 	
	advertisements on the internet or newspapers and analyze the job	 Look for several job vacancy advertisements 	





					•	advertisements found earlier according to the strengths and weaknesses of each student by answering questions and completing the tables in exercise 13 and 14. Write down the results of the analysis on the previous activity along with the reasons.		 on the internet or newspapers and analyze the job vacancies advertisements found earlier which are in accordance with the strengths and weaknesses of each student by answering questions and completing the tables in exercises 13 and 14 Write down the results of the analysis on the previous activity along with the reasons. 		
3-4	Write a job application letter	 Writing a Job Application Letter Things to Consider Before Writing A Job Application Letter Online Application Letters Job Application Letter Template Sample of Job Application Letter 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion • Case study • Presentation	6 x 50 minutes	•	List and explain the types of letters. Mention and explain the things that need to be considered in writing a letter. Mention and explain the parts of a letter. Mention and explain things that are not allowed in writing a letter. Understand job application letter templates and examples.	 Criteria: Accuracy and mastery of communicating in English Form of assessment: Oral test: question and answer Writing test: write a job application letter 	 Accuracy and mastery of student communication using English in: List and explain the types of letters. Mention and explain the things that need to be considered in writing a letter. Mention and explain the parts of a letter. Mention and explain the allowed in writing a letter. 	10%	





					 Doing exercise on Unit 2 Main Module. Write a job application letter according to the advertisement according to the qualifications (previous unit exercise). 		 Understand job application letter templates and examples. Doing exercise on Unit 2 Main Module. Write a job application letter according to the advertisement that matches the qualifications (previous unit exercise) 	
5-6	Write a CV	 Writing a Curriculum Vitae Things to Consider Before Writing a Curriculum Vitae Information a CV Should Include Curriculum Vitae Template Sample of CV 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion • Case study • Presentation	6 x 50 minutes	 Mention and explain the things that are considered in writing a CV. Mention and explain things that should be written on a CV. Understand the template of a CV. Understand the template of a CV. Mention and explain the vocabulary contained in a CV and do the exercises in the Main Module Unit 3. Write a CV according to the qualifications you have and the intended job according to the advertisement you found. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: question and answer • Writing test: • Write a CV	 Accuracy and mastery of student communication using English in: Mention and explain the things that are considered in writing a CV. Mention and explain things that should be written on a CV. Understand the template of a CV. Mention and explain the vocabulary contained in a CV and do the exercises in the Main Module Unit 3. Write a CV according to the qualifications you have and the intended 	10%





7-8	Practicing Job Interviews	 4. Conducting a Job Interview 4.1. Kinds of Job Interviews 4.2. Things to Prepare before Having a Job Interview 4.3. Things Supposed to Do on a D Day (of the Job Interview) 4.4. Common Questions Asked by the Interviewer 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion • Case study • Presentation	6 x 50 minutes	 List and explain the different types of job interviews. Mention and explain things that need to be prepared before a job interview. Mention and explain the things that should be done during a job interview. Understand the vocabulary used in job interviews by doing exercises in the Main Module unit 4. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: • Oral test: job interview • Written test: questions	 job according to the advertisement you found. Accuracy and mastery of student communication using English in: List and explain the different types of job interviews. Mention and explain things that need to be prepared before a job interview. Mention and explain the things that should be done during a job interview. Understand the vocabulary used in job interviews by doing exercises in the Main 	10%
9	Midterm exam							20%
10- 11	Practice effective presentations	 5. Delivering an Effective Presentation 5.1. Factors Make People Irritated during Presentation 5.2. Things to Consider before Presentation 5.3. Things to Consider in 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion	6 x 50 minutes	 By using English students can: Mention and explain the factors that cause the audience to be distracted during the presentation. Mention and explain the things that are 	 Criteria: Accuracy and mastery of communicating in English Form of assessment: Oral test: presentation writing test 	 Accuracy and mastery of student communication using English in: Mention and explain the factors that cause the audience to be distracted during the presentation. Mention and explain the things that are 	10%





		Making Power Point Slides 5.4. Things to Do during Presentations	 Case study Presentation 		 considered in preparing an effective presentation. Understand the terms used in presentations by doing exercises in Main Module Unit 5. Mention, explain, and make presentations using Powerpoint. Practice effective presentation methods. 		 considered in preparing an effective presentation. Understand the terms used in presentations by doing exercises in Main Module Unit 5. Mention, explain, and make presentations using Powerpoint. Practice effective presentation methods. 	
12- 16	Understand the tips and do the TOEIC ® or PECT	 6. Preparing for TOEIC ® or PECT (Polytechnic English Competency Test) 6.2. Strategies and Practice of Speaking Tests of TOEIC ® or PECT 6.3. Strategies and Practice of Written Tests of TOEIC ® or PECT 	Forms of Learning: Lectures & Assignments/Tutorial s Learning methods: • Lecture • group discussion • Case study • Presentation	15 x 50 minutes	 By using English students can: Understand tips for working on Listening questions on the TOEIC ® or PECT. Working on Listening TOEIC ® or PECT questions in the Main Module Unit 6. Understand tips for working on Reading questions on TOEIC ® or PECT. Working on Reading TOEIC ® or PECT. Working on Reading TOEIC ® or PECT questions in the Main Module Unit 6. Working on Reading TOEIC ® or PECT questions in the Main Module Unit 6. Working on TOEIC ® or PECT questions in the Main Module Unit 6. Working on TOEIC ® or PECT questions in the Main Module Unit 6. 	Criteria: Accuracy and mastery of communicating in English Form of assessment: - Oral test: question and answer • Written test: working on TOEIC ® or PECT questions.	 Accuracy and mastery of student communication using English in: Understand tips for working on Listening questions on the TOEIC ® or PECT. Working on TOEIC ® or PECT Listening questions. Understand tips for working on Reading questions on TOEIC ® or PECT. Working on Reading TOEIC ® or PECT. Working on Reading TOEIC ® or PECT questions. Working on TOEIC ® or PECT questions. 	10%





17	Final exams							









MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION			
Decision Support System	RTI206002	Information Systems	3 credits/6 hours	5				
AUTHORIZATION	RPS Developer Lect	urer	MMK Coordinator	Ka PRODI				
	Ulla Defana Rosiani	, ST <i>,</i> MT	Faisal Rahutomo, ST.,	Imam Fahrur Rozi, ST, MT				
	Rudy Ariyanto, ST.,	M.Cs.	M.Kom., Dr. Eng.					
	Muhammad Afif He	ndawan, S.Kom., MT						
	Candra Bella Vista,	5. Kom. <i>,</i> MT.						
	Rakhmat Arianto, S	ST., M.Kom						
Learning Achievement (CP)	Learning Outcomes	of Study Program Graduates	(CPL-Prodi)					
	CO. Interneti		d a théan	_				
	58 Internaliz	e academic values, norms, and	d ethics.					
	KU2 Able to d	emonstrate independent, qua	lity and measurable performa	nce.				
	PP1 Masterin	g the concepts of applied mat	nematics, basic ICT knowledge	(Algorithms, Progra	amming Databases, computer			
	networks	etc.), engineering science, ar	d engineering principles in the	e ICT field in depth.				
	PP4 Masterin	g the principles of intelligent c	omputing in logical and mathe	ematical proof tech	niques (logic & mathematical proof)			
	to genera	te effective alternative solution	ons in depth.					
	KK1 Able to a	oply applied mathematics, cor	nputational knowledge (Algori	thms. Programming	g and Databases), engineering			
	science. a	science and engineering principles in the fields of software development (desktop, web and mobile) computer networks and						
	other ICT	other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business						
	Intelligen	Intelligence etc).						
	KK4 Able to u	tilize intelligent computing in t	he process of solving problem	is based on analysis	and information on ICT products.			





	KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned
	Learning Outcomes Graduates charged to courses (CPL-MK)
	Able to understand the concepts and applications of the Introduction to SPK, System Model, SAW Method , AHP Method, Moora Method, Electre Method, Topsis Method, GDSS, Fuzzy Modeling .
Short Course Descriptions	This course discusses technology for developing decision support system applications in order to support management in making
	data using certain methods.
Learning Materials / Subjects	Introduction to SPK, System Model, SAW Method, AHP Method, Moora Method, Electre Method, Topsis Method, GDSS, Fuzzy Modeling.
References	Main :
	 Shimizu, Tamio, and friends, 2006, Strategic Alignment Process and Decision Support Systems: Theory and Case Studies, by Idea Group Inc.
	2. Goul, Michael, and Karen Corral, 2005, Enterprise model management and next generation decision support, Elsevier BV All rights reserved.
	3. Yao, JingTao, 2010, Web-based Support Systems, Springer-Verlag London Limited.
	4. Gray, P., 1994, Decision Support and Executive Information Systems, Prentice Hall.
	5. Turban, E., 1995, Decision Support and Expert Systems, Prentice Hall
	6. Eta S. Berner, 2016, Clinical Decision Support Systems: Theory and Practice, Springer.
	7. Frada Burstein, et al., 2007, Handbook on Decision Support Systems 1: Basic Themes, Springer Science & Business Media.
	8. Jason Papathanasiou, et al., 2016, Real-World Decision Support Systems: Case Studies, Springer.
	Supporters:
Instructional Media	Software : Hardware :





Name o	OS BRO PRO f Lecturer Ulla Ruo Mu Car Rak	- WIN DWSE DGRA Defa ly Ari hami dra E hma	NDOWS, MS.OFFICE, V ER,MYSQL, PHP, HTML MMING LANGUAGE ana Rosiani, ST, MT yanto, ST., M.Cs. mad Afif Hendawan, S Bella Vista, S. Kom., M t Arianto, S.ST., M.Kor	VEB , LCDs and Pro .Kom., MT T. n	jectors				
Require M in g gu Ke	ments Course - Planned Final Capability (Sub- CP-MK)		Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight
									(%)
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students can explain the role and influence of decision making in everyday life. Students can explain the forming elements of decision making and explain the uses and Management Information Systems. Students can explain the advantages of using managerial decision making and management information systems Students can explain the functions, processes that occur and the types of 	a. b. c. d. f.	Managerial Decision Making and Management Information Systems Framework for decision support Definition of Decision Support System GDSS EIS, ES, AI The difference between MIS and DSS	 Seminars, Contextual Instruction Role-play simulation Small group discussions 	1x6x50 '	Practical exercises and assignments	 Question and answer Task completion 	 a. The accuracy of explaining the role, influence of decision-making and Management Information Systems in life b. Able to re-explain the basic differences between MIS and DSS, EIS, ES, AI c. Be able to mention the decision-making function as a decision-making phase (Intelligence, 	





le l	· · · · · · · · · · · · · · · · · · ·						
	decisions and decision- making phases	g. Decision-making					design, choice, implementation)
		making phase (Intelligence, design, choice, implementation					d. Be able to name several decisions and their uses correctly
		Decisions					
		j. Semi-structured decisions					
		k. Unstructured Decisions					
2	 Students understand and are able to apply the Weighted Sum Product, Weighted Product, and SAW methods Students understand the definition and use of Process Analytical Hierarchy (AHP) Students are able to understand making a comparison matrix according to AHP rules 	 a. Multicriteria Decision Making method Weighted Product b. Multicriteria Decision Making method Analytic Hierarchy Process (1) 	 Seminars, Contextual Instruction Role-play simulation Small group discussions 	1x6x50'	Practical exercises and assignments	 Question and answer Task completion 	 Able to make flowcharts of SAW and AHP methods in Cl search Able to apply the method SAW and AHP in Cl search in excel
	 Students are able to check the Consistency Index on each matrix in 						





	АНР							
3-4	 Students know the stages of ranking with the AHP method Students are able to find the eigenvector values in the matrix between AHP criteria Students are able to find the eigenvector values in the matrix between alternatives on each criterion of the AHP method Students are able to find the final weight to be sorted as AHP output 	Multicriteria Decision Making method Analytic Hierarchy Process	 Seminars, Contextual Instruction Role-play simulation Small group discussions 	1x6x50'	Practical exercises and assignments	 Question and answer Task completion 	 Able to make AHP method flowcharts Able to apply the AHP method in excel 	
5	Quiz 1	From meeting 1 to 4	Written/Online Test	1x6x50'	Quiz 1	Quiz 1	Answer questions correctly	20%





6	 Students know the stages of ranking using the Elimination Et Choix Traduisant la Realité (ELECTRE) method Students can distinguish concordance and discordance on ELECTRE Students are able to find the final weight to be sorted as ELECTRE output 	<i>Multicriteria Decision</i> <i>Making</i> method ELECTRE	 Contextual Instruction Seminar Role-play simulation Small group discussions 	1x6x50 '	Practical exercises and assignments	 Question and answer Task completion 	 Able to make flowcharts of the Electre method Able to apply the Electre method in excel 	
7	 Students know the stages of ranking using the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method Students can distinguish positive ideal solutions and negative ideal solutions in TOPSIS Students are able to find the final weight to be sorted as TOPSIS output 	Multicriteria Decision Making TOPSIS method	 Contextual Instruction Seminar Role-play simulation Small group discussions 	1x6x50 '	Practical exercises and assignments	Question and answer Task completion	 Able to make flowcharts of the TOPSIS method Able to apply the TOPSIS method in excel 	
8	UTS	From meeting 1 to 7	Written/online test	1x6x50'	UTS	UTS	Answer Questions Correctly	30%
9	 Students understand the definition and use of the Multi-Objective Optimization Method on 	Multicriteria Decision Making method Moora(1)	 Contextual Instruction Seminar Role-play 	1x6x50 '	Practical exercises and assignments	Question and answer Task completion	 MOORA method flowcharts 	





	 The Basic of Ratio Analysis (MOORA) Students are able to understand making decision matrices according to MOORA rules Students know the stages of ranking using the Multi-Objective Optimization Method on The Basic of Ratio Analysis (MOORA) Students are able to determine the criteria that are ordered as the MOORA ranking Students are able to find the final weight to be 		simulation • Small group discussions				 Able to apply the MOORA method in excel 	
10	 Students know the meaning of GDSS Students can simulate GDSS either directly or using a prototype Students get to know the ranking between groups of decision makers 	Group Decision Support System and various BORDA/HARE rankings	 Lecture Discussion Practice 	1x6x50'	Practical exercises and assignments	 Question and answer Task completion 	 Able to mention the meaning and function of GDSS Able to mention the use of GDSS Able to simulate GDSS 	




11	 Students know various combinations of DSS methods Students look for journals related to SPK research 	Combination of Methods	 Discussion Presentation from student group 	1x6x50'	Presentation	Q&A and collaboration in groups	 Able to explain various combinations of SPK methods 	
12	Quiz 2	From Meeting 9 - 11	Writing test	1x6x50'			Answer Questions Correctly	20%
13	 Students can know the meaning and purpose of fuzzy in SPK Students know the types of fuzzy including the Fuzzy Inference System Students know and are able to make membership matrices in fuzzy 	Introduction to Fuzzy	 Contextual Instruction Seminar Role-play simulation Small group discussions 	1x 6x50'	Practical exercises and assignments	Question and answer Task completion	 Be able to mention the meaning of fuzzy and its role in SPK Able to mention the types of fuzzy 	
14	 Students understand and know Sugeno's FIS stages Students know and are able to apply fuzzification to the Sugeno method Students are able to apply Sugeno's FIS calculation solutions in implementing SPK 	Fuzzy Inference System (Sugeno)	 Contextual Instruction Seminar Role-play simulation Small group discussions 	1x 6x50'	Practical exercises and assignments	Question and answer Task completion	 Able to make a flowchart of Sugeno's FIS method Able to apply Sugeno's FIS method in excel 	
15	 Students understand and know Tsukamoto's FIS stages 	Fuzzy Inference System (Tsukamoto)	 Contextual Instruction Seminar Role-play 	1x 6x50'	Practical exercises and assignments	Question and answer Task completion	Able to make flowcharts of the	





	 Students know and are able to apply fuzzification to the Tsukamoto method Students are able to apply Tsukamoto's FIS calculation solutions in implementing SPK 		simulation • Small group discussions				Tsukamto FIS method • Able to apply Tsukamoto's FIS method in excel	
16	Students are able to make a project from one of the methods that have been taught in the SPK course	Final project presentation	Presentation	1x 6x50'	Practical exercises and assignments	Question and answer Task completion	Able to complete one of the methods taught in the SPK course in program implementation	
17	UAS	From meeting 1 to 16	Written/Online Test	1x6x50'	UAS	UAS	Answer questions correctly	30%





3. Big Data



INFORMATION TECHNOLOGY DEPARTMENT

MALANG STATE POLYTECHNIC

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

		:	SEMESTER LEARNING PLAN (RPS)					
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits)/ hour	SEMESTER	DATE. PREPARATION			
Big Data	RTI206003	Expertise Courses	3 credits/6 hours	6	March 1, 2022			
AUTHORIZATION	RPS Developer	Lecturer	MMK Coordinator	Ka PRODI				
	 Yoppy Yun Dian Hanifu M.Kom. Vipkas Al H Habibie Ed M. Hasyim MKom. M. Shulhar Noprianto 	hasnawa, S.ST., M.Sc. udin Subhi, S.Kom., ladid Firdaus, ST., MT Dien, S. Kom., MT Ratsanjani S.Kom., n Khairy, S.Kom., M.Kom. S. Kom., M. Eng.	Dwi Puspitasari, S.Kom., M.Kom.	Imam Fahrur Rozi, ST., MT.				
Learning Achievement	Learning Outcomes of Study Program Graduates (CPL-Prodi)							
(CP)	1. [S8] Internalizing academic values, norms, and ethics.							
	2. [S9] Demonstrates a responsible attitude towards work in his field of expertise independently.							
	3. [PP1] Mast etc.), engin	[PP1] Mastering the concepts of applied mathematics, basic knowledge of ICT (Algorithms, Programming, Databases, Computer Networks, etc.), engineering science, and engineering principles in the field of ICT in depth.						
	4. [PP7] Mast field.	tering knowledge about te	chnological developments and the late	latest issues (ethical, social, legal and economic) related to the ICT				





	 [KK1] Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics), embedded, Information Systems, Intelligent systems, Business Intelligence, etc). 								
	6. [KK6] Able to	use the latest technology related to the field of ICT / science and technology to present information technology solutions.							
	7. [KU1] Able to accordance wi	apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in the field of expertise and in th work competency standards in the field concerned.							
	8. [KU2] Able to	demonstrate independent, quality and measurable performance.							
	Learning Outcome	es Graduates charged to courses (CPL-MK)							
	Able to explain the concept of Big Data, its current needs, trends and relevance. Able to explain the architecture, Hadoop ecosystem and its components. Be able to explain the meaning and workings of the Hadoop File System (HDFS), work with HDFS, and create applications that interact with HDFS. Be able to explain the meaning and workings of the MapReduce framework and create MapReduce Job applications with								
	Java. Able to give e	examples and explain the use of Big Data technology in the context of modern research/research.							
	SUB-CPMK 1	SUB-CPIVIN 1 Students are able to explain oncents and work with HDES [C1_C2_C4_C5]							
	SUB-CPIVIK 2	CPMK 3 Students are able to explain concepts, and work with ManReduce [C1, C2, C4, C5]							
		Students are able to explain concepts, and work with MapReduce. [C1, C2, C3, C5]							
	SUB-CPMK 5	Students are able to explain the description of research and development with big bata [C2, C3, C6] Students are able to give examples and explain the use of Big Data technology in modern research fields. [C2, C4, C5, C6]							
Short Course Descriptions	In this course students will learn about the ins and outs of Big Data technology which includes basic theory, history, relevance, and development. Students will also learn about Hadoop and its two main components, namely HDFS and MapReduce. In addition, students will also be given insight into the use of Big Data in currently developing research fields.								
Learning Materials /	1. Big Data Theory								
Subjects	2. HDFS								
	3. MapReduce								
	4. Research and Development with Big Data								
	5. Review Big Data Publications								
References	Main :								





	1. Nataraj Dasgupta. 2018	. "Practical Big Data Analytics".								
	2. Buyya, Rajkumar. Calhei	iros, Rodrigo N. Dastjerdi, Amir Vahid. 2016."Big Data Principles and Paradigms".								
	3 Morgan Kaufmann I I	escovec A Rajaraman and L IIIIman "Mining of Massive Datasets"								
	3. Worgan Kaamama, J. E.									
	Supporters:									
	2. Udemy - The Ultimate Hands-On Hadoop: Tame your Big Data!									
Instructional Media	Software :	Hardware :								
	Teaching	1. Laptops/PCs								
	1. Microsoft PowerPoint	2. Projector LCDs								
	2. Google Forms	3. Projector Screen								
	3. Google Classroom									
	Practice									
	1. LinuxUbuntu									
	2. VirtualBox									
	3. Hadoop									
	4. JRE									
	5. VPNs									
	6. SSH									
Name of Lecturer	1. Yoppy Yunhasnawa, S.S	T., M.Sc.								
	2. Dian Hanifudin Subhi, S.	Kom., M.Kom.								
	3. Vipkas Al Hadid Firdaus,	ST., MT								
	4. Habibie Ed Dien, S. Kom	., MT								
	5. M. Hasyim Ratsanjani S.	Kom., MKom.								
	6. M. Shulhan Khairy, S.Ko	m., MI.Kom.								





		7. Noprianto S. Kom., M	. Eng.					
Requirem Week:	Planned Final Capability (Sub-CP-MK)	- Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
1-3	Students are able to explain the concept of Big Data.	 Parallel Parallel Parallel Parallel Parallel Processing on Hadoop 	Lectures, discussions.	6 x 50"	 Able to explain the meaning of Big Data. Able to explain the background of the emergence of Big Data technology. Able to explain the benefits of Big Data technology. Be able to explain the meaning of Hadoop Be able to explain the history of the emergence of Hadoop Able to explain the concept of Hadoop Ecosystem 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion. Students submit reports on answers to practice questions in a timely manner. 	3%





					 Be able to explain the concept of storage in Hadoop Be able to explain the concept of parallel processing in Hadoop 			
4	Quiz-1	Material week-1 sd week-3	Theory Exam	6 x 50"	Working on written exam questions in the form of multiple choice and/or descriptions.	Number of correct answers.	Value is obtained based on the calculation of the number of correct answers.	9%
5-7	Students are able to explain concepts, and work with HDFS.	 Definition and How HDFS Works Name nodes & Data Nodes Works with HDFS Create applications that interact with HDFS 	Lectures, discussions.	6 x 50″	 Be able to explain the definition and workings of HDFS Be able to explain the meaning of Name Node and Data Node, and how the two work together in the context of Hadoop. Able to explain the syntax and usage of basic HDFS commands. Able to identify an issue that causes basic Hadoop 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion. Students submit reports on answers to practice questions in a timely manner. 	12%





					 commands to not run Able to analyze the needs of HDFS applications Able to design HDFS application schemes. Able to code HDFS applications. 			
8	UTS	Material week-5 to week-7	Practicum Exam	6 x 50″	Students create a Java application that can perform read- write operations to the Hadoop cluster.	 Complete application features. Completion speed. 	 Applications that are collected with complete features, the value will be better. If the completeness of the application is the same, then the one who collects it first is the one with better value. 	9%
9-11	Students are able to explain concepts, and work with the MapReduce framework.	 Understanding MapReduce Mappers & Reducers 	Lectures, discussions.	6 x 50"	 Be able to explain the meaning of MapReduce. Be able to explain examples of cases 	- Liveliness in discussion Collection of answers to practice questions.	 Students take part in the discussion. Students submit reports on answers to 	12%





- The MapReduce	that can be solved	practice questions
daemon	with MapReduce.	in a timely
	- Be able to explain	manner.
- Definition of	the meaning and	
MapReduce Job	difference	
Creata	between Manners	
- Create ManBaduaa Jaha	and Reducers	
MapReduce Jobs	- Be able to explain	
- Another	the meaning and	
Example of	workings of the	
MapReduce Job	MapPeduce	
Implementation	daaman on	
	Uadaan	
	- Be able to explain	
	the purpose of	
	MapReduce Job.	
	- Able to design	
	MapReduce Job	
	based on specific	
	case examples.	
	- Able to create a	
	MapReduce Job	
	with prepared	
	case examples.	
	- Able to	
	independently	
	identify examples	
	of other cases	
	where a	
	MapReduce Job	
	can be made.	
	- Able to design and	
	create a	
	MapReduce Job	





12	Quiz-2	Material week-9 to week-11	Theory Exam	6 x 50″	from independently identified case examples. Working on written exam questions in the form of multiple choice and/or descriptions.	Number of correct answers.	Value is obtained based on the calculation of the number of correct answers.	6%
13	Students are able to explain an overview of research and development with Big Data.	 Research Development Current developments in Big Data Technology Some examples of the latest technologies in the Hadoop ecosystem Examples of using big data in scientific research. Examples of popular big data products. 	Lectures, discussions.	6 x 50"	 Be able to explain the meaning of research. Be able to explain the meaning of development. Be able to explain the differences and similarities of research vs development. Able to describe the current development of Big Data technology. Able to mention and explain some examples of the latest technology in the Hadoop ecosystem. Able to explain examples of the 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion. Students submit reports on answers to practice questions in a timely manner. 	3%





					 use of big data in scientific research. Able to mention and explain examples of the use of big data in today's popular end-user products. 				
14-16	Students mention and explain examples of using Big Data in the field of modern research.	 Scientific Publication Concept Searching for Scientific Publication Articles Big Data research in the field of handling Covid-19 Big Data Research in Education. Big Data research in the industrial/retail sector. 	Lectures, discussions.	6 x 50"	 Able to explain the concept of scientific publications. Able to find scientific articles on Big Data. Be able to explain the role of Big Data in handling the Covid-19 pandemic based on scientific articles. Able to explain the role of Big Data in the world of Education based on scientific articles. Able to explain the role of Big Data in industry or retail based on scientific articles. 	 Liveliness in discussion Collection of answers to practice questions. 	 Students take part in the discussion. Students submit reports on answers to practice questions in a timely manner. 	3%	





17	UAS	Capstones	Project	3 x 50″	Create Big Data portfolio applications	 The complexity of the application made. Quality of presentation/explanation. 	 Application complexity is simple, moderately complex, or complex. Explanations submitted incomplete, complete, or complete and interesting. 	12%	
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4. Research methodology



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D 4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE CULTURE	WEIGHT	SEMESTER	DATE. PREPARATION	
			(credits)/hour			
Research methodology	RTI206004	Expertise Courses	2 credits/4 hours	7	February 1, 2021	
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI		
	1. Ulla Delfan	a Rosiani, ST., MT.	Dwi Puspitasari,	Imam Fahrur Roz	i, ST., MT.	
	2 Danni Catul	Andalia C. Kana MANACI	S.Kom., M.Kom			
	Z. Banni Satri	a Andoko, S. Kom., MI.MSI				
	3. Rakhmat A	rianto, S.ST., M.Kom				
	4. Robby Ang	griawan SE., ME.				
Learning Achievement (CP)	Learning Outcome	s of Study Program Graduates (CP	L-Prodi)			
	S8 Internalize	academic values, norms, and ethic	CS.			
	S9 Demonstra	te a responsible attitude towards	work in the field of exp	ertise independent	ly.	
	PP6 Mastering	knowledge of oral and written con	nmunication techniques	s using national and	d international languages.	
	KU2 Able to der	nonstrate independent, quality an	d measurable performa	ince.		
	KU5 Able to ma	ke appropriate decisions based on	standard procedures.	lesign specificatior	ns. occupational safety and security	
	requireme	nts in supervising and evaluating w	/ork	0 1	-,,,	
		auto and retrieve	volk. Nata ta angura validitu	and provent place		
	KU9 Able to do	cument, store, secure, and retrieve		and prevent plagi		
	Learning Outcome	s Graduates charged to courses (C	PL-MK)			





	Able to understand the concept of introdu	ictory research;							
	Able to choose research topics and prelim	inary studies;							
	Able to formulate problems and hypothes	es;							
	Be able to choose a research approach;								
	Being able to choose variables;								
	Able to determine data sources;								
	Able to determine and arrange research ir	nstruments;							
	Able to collect data, analyze data, and dra	w conclusions;							
	Able to compile research reports in a syste	ematic, quality and measurable manner;							
Short Course Descriptions	Understand and be able to conduct scient	ific research with a complete, sequential, and precise methodology.							
Learning Materials / Subjects	Introduction, basic research concepts, pro	oduction, basic research concepts, problem identification, literature review, research design, methods, techniques, instruments							
	Quantitative analysis, Qualitative analysis,	Thesis progress report, Writing skills, Paper section, Final check							
References	Main :								
	1 Zainal A Hasibuan Research Met	bodology in the Field of Computer Science and Information Technology Concepts Techniques							
		inclosed by in the Field of Computer Science and information Feelmonogy Concepts, Feelmiques,							
	and Applications, Filkom UI, 2007								
	2. Adrian Wallwork, English for Wri	ting Research Papers, Springer, 2011							
	3. Rudy Ariyanto et al, Guidelines fo	r Writing Final Reports and Thesis Version 2.3, Department of Information Technology, State							
	Polytechnic of Malang 2017								
	1 oryteenine of Walang, 2017								
	Supporters:								
Instructional Media	Software :	Hardware :							
	Ms. office	LCDs and Projectors							
Name of Lecturer	Ulla Delfana Rosiani, ST., MT.								
	Banni Satria Andoko, S. Kom., M.MSI								
	Rakhmat Arianto, S.ST., M.Kom								





	Robb	y Anggriawan SE., ME.						
Require	ments Course -							
Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Students master the basic concepts of research	 Basic Concepts of Research Logical thinking (deductive reasoning, inductive) Research methods and research methodology Methodological benefits Research process 	Contextual Learning	1x4x50'	 Listen to lecture material Discuss with group mates 	 Accuracy in answering questions Activeness in class 	Accuracy in explaining the basic concepts of research, logical thinking, methodology, and research processes	-
2	Students are able to do <i>a literature review</i>	 Understanding Benefit steps sources Citation 	Contextual Learning	1x4x50'	 Listen to lecture material Discuss with group mates to understand the basics of reference 	 Accuracy in answering questions Activeness in class 	 Able to understand scientific references Able to apply reference citation methods 	-
3	Students are able to identify problems	 Identification and formulation of the problem problem formulation steps Example of problem 	Contextual Learning	2x4x50'	 Listen to lecture material Discuss with group mates 	 Accuracy in answering questions Activeness in class 	 Able to mention and identify problems in research topics Able to formulate problems with the 	-





4	Students are able to create a framework	 formulation Research hypothesis Identify the main ideas in the framework Pouring out the basics of literacy reference Determine the methods that are appropriate to the research Build stages of research 	Discovery Learning	1x4x50'	 Listen to lecture material Discuss with group mates to understand the basics of reference 	 Accuracy in answering questions Activeness in class 	right steps Accurate understanding of research design	
5	Students master research methods, techniques and instruments	 Instrument Interview Questionnaire Designing a Questionnaire 	Contextual Learning	1x4x50'	 Listen to lecture material Discuss with group mates to understand the basics of reference 	 Accuracy in answering questions Activeness in class 	 Able to conduct interviews with the right questions to get the data needed in research Be able to tell the integrity of the research that is being planned in a formal document 	
6	Students understand the principle of analyzing quantitatively	 Quantitative research formulation in quantitative research Variable Validity and reliability Data collection 	Contextual Learning	1x4x50'	 Listen to lecture material Discuss with group mates to apply quantitative analysis 	 Accuracy in answering questions Activeness in class 	 Able to perform quantitative analysis Able to tell quantitative analysis activities 	





7	Students understand the principle of analyzing qualitatively	 Quantitative data analysis Frequency distribution Cross tabulation Correlation Regression Qualitative research problem formulation in qualitative research Qualitative data Qualitative data analysis Sample in qualitative research Differences in quantitative research 	LectureDiscussion	1x4x50'	 Listen to lecture material Discuss with group mates to understand quantitative analysis 	 Accuracy in answering questions Activeness in class 	 Able to do qualitative analysis Able to tell the activity of qualitative analysis 	
8	UTS	Meeting 1 - 7	Personal Tests	1x4x50'	• Answer questions / questions UTS	 Accuracy in answering questions write 	Able to answer correctly	30
9-11	Students understand writing skills	 Planning and preparation for writing Word order Break up long sentences 	Discovery Learning	3x4x50'	 Listen to lecture material Discuss with a groupmate about writing skills 	 Accuracy in answering questions Activeness 	Able to write according to precise scientific principles	





12-15	Students are able to understand how to write the right according to the parts of the paper	 Compose paragraphs and sentences Concise, avoid redundancy Avoid ambiguity and obscurity Clarify who does what Highlight your discoveries Protection against criticism Describe in your own words, avoid plagiarizing/paraphrasing Title Abstract Introduction Literature review Methodology Results Discussion Conclusion 	Discovery Learning	4x4x50'	 Writing p Presentat: exercise r Listen to material Discuss v groupmat writing sk Writing p Presentat: exercise r 	ractice ion of results lecture vith a re about cills practice ion of results	 in class Accuracy in answering questions Activeness in class 	Accuracy in writing in each part of existing scientific writings	
		 Discussion Conclusion Reference Award (acknowledgment) 							





		Helpful phrases						
17	UAS	From meeting 1 to 16	Personal Tests	1x1x50'	• Answer UAS questions/questions	Accuracy in answering written questions	Answer questions correctly	40







REGERICAL STREET	MALANG INFORMATI STUDY PRO	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D 4 INFORMATICS ENGINEERING									
		SEMESTER LEA	RNING PLAN	(RPS)							
SUBJECT	CODE	COURSE CULTURE	WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION						
IoT (Internet of Things)	RTI206005	Technique Informatics	3 credits/6 hours	1							
AUTHORIZATION	RPS Developer L	ecturer	MMK Coordinator	Ka PRODI							
	Dodit Suprianto Vipkas Al Hadid Noprianto Muhammad Shu	lhan Khairy									
Learning Achievement (CP)	S8 Internalize S9 Demonstra PP1 Mastering etc.), engineering PP2 Mastering KK1 Able to ap engineering prind Technology field KK4 Able to ut KU1 Able to ap in accordance wi KU2 Able to der Learning Outcom	academic values, norms, and e te a responsible attitude towar the concepts of applied mathe g science, and engineering prin ICT product development meth ply applied mathematics, comp ciples in the field of software o s (vision - ilize intelligent computing in th ply logical, critical, innovative, th work competency standards nonstrate independent, quality nes Graduates charged to cou	ethics. rds work in the field of dematics, basic ICT know ciples in the ICT field in hods to provide the righ putational knowledge (development (desktop, development (desktop, ne process of solving pr quality, and measurable s in the field concerned and measurable perfor rses (CPL-MK)	expertise indep wledge (Algorith of depth. Int solutions thr Algorithms, Pro- web and mobil roblems based toblems based thinking in ca l. rmance.	bendently. thms, Programming, Databases, computer networks, ough one or more application domains. ogramming and Databases), engineering science, and ile), computer networks and other ICT / Science and on analysis and information on ICT products. arrying out specific work in their field of expertise and						





	Students can implement hardware remote control w	ith TCP/IP Sockets							
	• Students are able to apply and understand the conce	pt of edge computing (Optional)							
	• Students are able to understand and implement IoT of	cloud computing (Public, Ubuntu Server & Raspberry Pi 3)							
	• Students are able to explain the concept of the MQT	T transport protocol							
Short Course Descriptions	• Explains the IoT architecture which consists of device consthem.	straints, edge computing and IoT cloud computing and how to implement							
	• Create a microcontroller hardware control program that is	s controlled locally or remotely (remote control)							
Learning Materials / Subjects	IoT architecture								
	Microcontroller Unit (Arduino & NodeMCU), Hardware	e communication interfacing (I 2 C, SPI, UART)							
	Edge Computing								
	IoT Server Clouds								
	Implement IoT								
References	Main :								
	2. Arduino Programming For Beginners, 2019, Jasakom								
	3.								
	Supporters:								
Instructional Media	Software :	Hardware :							
	Fritzing Designer, Linux Ubuntu Desktop Version, Linux	Arduino, RaspBerry Pi 3, ESP8266-01, NodeMCU Amica, Personal							
	Raspbery Pi 3 Version, Arduino IDE, Visual Studio 2017 C#,	Computer, Project Board, Various Sensors, Various Actuators, LCD,							
	Notepad++	and other Supporting Components							
Name of Lecturer									
Requirements Course	C Programming, C# UI Desktop Programming, C# Socket Program	amming, Distributed Programming, Basic Electronics (Analog/Digital),							





M in g gu Ke	Planned Final Capability (Sub- CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Rating Weight (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Understanding the concept and architecture of IoT 	 Device Constraints (Microcontroller Units, sensors, actuators) Edge Computing Cloud Computing 	LectureDiscussion	6 x 45"			 Able to understand the concept and architecture of loT and its supporting components 	3%
2	• microcontrollers	 Board introduction and pin definition MCU Input-Output ADC-DAC (Analog to Digital Converter) Interfacing Protocols (UART, I2C, SPI) Voltage Divider 	 Lecture Discussion 	6 x 45"			 Able to understand MCU (Microcontroller Unit Able to understand input/output, ADC/DAC (Analog to Digital Converter) and types of interfacing to other devices Understanding Voltage and Current in best practice 	3%
3	 Software & hardware installation & configuration support How to operate the software Assembling MCU with multiple sensors, actuators and LCD 	 Fritzing Designer Arduino IDE Visual Studio 2017 Community Debugging with Serial Monitor Assembling on the project board: 5 different LEDs, 	LecturePractice	6 x 45"			 Have skills in mastering supporting tools Have skills in assembling components and devices (Device Constraints) Able to configure MCU (port assignment) Able to operate programs 	4%





	• Basic MCU coding	DHT11, LCD1602, LDR				and write to MCU devices	
	and Writing	• Addad NadaMCU librarias					
		Added Nodewic U libraries					
4	Project 1:	• Explain how digitalWrite	• Lecture	6 x 45″	-	• Able to assemble a series of	4%
	Implementation of Running LED Program	works	• Pre k tech			LEDs that are controlled by	
		• Implementation of Running LED Coding				the program	
						• Able to understand how the	
		• LED simulation development				instructions work on the	
						LED from the MCU	
						• Able to develop running	
						LED applications in other	
						forms	
5	• Project 2:	• Explain how the DHT11	• Lecture	6 x 45″		• Able to understand how the	4%
	Implementation of	sensor works	Practice			DHT11 temperature and	
	Temperature &	• Explains how analogRead				numberly sensor works	
	Humidity Sensor	works				• Able to make a program to	
	Program	• Displays temperature and				to the LCD screen	
		humidity in degrees and				· · ···· · · · · · · · · · · · · · · ·	
		LCD in real time				• Able to understand how the temperature and humidity	
						program works	
6	• Project 3.	• Explain how the LDR light	• Lecture	6 x 45″		• Able to understand how the	4%
U	Implementation of	sensor works		0 / 15		LDR light sensor works	470
	the LDR Light Sensor Program	 Calculates and displays the 	• Practice			• Able to make a program to	
		light intensity received by				display LDR light sensor	
		the LDR sensor analogously				data to the LCD screen	
		• Displays temperature and				• Able to make a simple	
		humidity values to the I2C				classification program for	
		LCD screen				the intensity of light	





		• Makes a description classification on the LCD: "Dark", "Dim", "Bright"				•	received by the sensor into "Dark", "Dim", "Bright" information Able to understand how the light intensity program works	
7	 Project 4: Implementation of Ultrasonic Sensor Program 	 Describes the distance calculation process based on waves sent and received Displays the distance between the obstacle with ultrasonic to the I2C LCD screen in cm and inches 	 Lecture Practice 	6 x 45"			 Able to understand how the ultrasonic sensor works Be able to understand how to calculate the distance between the obstacle and the ultrasonic sensor based on the wave signal sent and received Able to make a program to calculate the distance between the obstacle and the sensor in units of cm and inches which is displayed on the I2C LCD screen 	4%
8	 Project 5: Implementation of the RFID Program 	 Explain how the RFID card works and its frequency Reads RFID card ID TAG Turns on the LED if an RFID TAG is registered in the program Displays the description of "Registered Card" and "Rejected Card" for each card read 	 Lecture Practice 	6 x 45"	-		 Able to understand how the RFID sensor works Able to make a program to read RFID card ID TAG Able to make a program to detect whether the RFID card has been registered or not Able to make a program to display "REGISTER" or "NOT REGISTER" 	4%





		• Develop applications according to the scenario of each working group			information on the LCD screen and instruct the LED to turn on or off when an RFID card is detected
9	 UTS : Making Microcontroller Projects 	 Create independent projects based on learned sensors The group is tasked with creating a project scenario 	 DemoProjects – 	6 x 45"	Able to understand how the program that has been made works. Proof of UTS project assignments
10	 Project 6: Creating a socket client program 	 Explain the concept of TCP/IP communication Explains the concept of the Socket TCP/IP protocol so that the MCU can communicate with other devices Create a socket client program on the MCU side that is tasked with sending sensor data to the Socket Server C# Desktop GUI in real-time 	LecturePractice	6 x 45″	 TCP/IP socket client communication protocol Able to make communication program between MCU as client socket and computer as server socket with C# Able to create a program to send sensor data from MCU to computer in real-time with TCP/IP socket communication protocol
11	 Project 7: Create a Socket server program 	 Explains how socket servers work as "listening" for all connected client sockets Explaining the Asyncrounus socket concept with C# Creating a Socket Server program with GUI C#, Java, Python, etc. to receive MCU sensor data, then display it in 	LecturePractice	6 x 45"	 Able to understand TCP/IP socket client communication protocol Able to make communication program between MCU as server socket and computer as client socket with C# Able to create programs to





		real-time on the socket server side			listen to clients (listening) and receive sensor data from the MCU to the computer in real-time with the TCP/IP socket communication protocol	
12	 Project 8: Installation and configuration of IoT Local Server with Raspberry Pi 3 	 Explains the steps for installing Blynk IoT Server on Raspberry PI 3 Configuring Blynk Server on Raspberry PI 3 	LecturePractice	6 x 45" -	 Able to install and configure Linux Mate and IoT application Blynk Server on Raspberry Pi 3 Able to run IoT service Blynk server on Raspberry Pi 3 	6%
13	 Project 9: Monitoring & Controlling on IoT Local Server 	 Installing the Blynk (subscriber) application on mobile devices (Android, IPhone) Make design and configuration of blynk client (subscriber), adjusted to Device MCU (sensor on publisher) Displays sensor logger data to the blynk mobile application Controlling the MCU (actuator) of the subscriber blynk client 	 Lecture Practice 	6 x 45"	 Able to install and configure Blynk Client on android or iPhone mobile devices Able to design blynk client interface as a subscriber Able to display sensor data from MCU (publisher) to blynk client mobile (subscriber) Able to control MCU from blynk mobile 	6%
14	 Project 10: Monitoring & 	 Registration, configuration and designing dashboard on 	Lecture	6 x 45"	 Able to register and configure public IoT Server 	6%





	Controlling on IoT Public Server (Cloud IoT)	 public IoT Server (<u>https://thinger.io</u>) Displays MCU sensor data to thinger.io Controlling MCU actuators from the public IoT server thinger.io 	Practice		 (thinger.io or others) Able to design a dashboard system to display sensor data while controlling the MCU from a public IoT server 	
15	Project 11:IOT Data Security	 Send encrypted sensor data from MCU side for data security Displays the results of data that has been encoded to the IoT Server 	LecturePractice	6 x 45"	 Able to understand the concept of data encryption in IoT architecture Able to make a program to encode data on the MCU side that will be sent to the IoT Server Able to display encoded data on IoT Server side 	6%
16	 Review and evaluation 	 Review and evaluation of the final project as a UAS score that was planned at the beginning of the 10th meeting 	 Lecture Demo projects 	6 x 45"	• Able to show the progress of work that has been done	6%
17	UAS: Demo Project IoT	•	 DemoProjects 	6 x 45"	• Able to demonstrate the results of project work	20%





6. Image Processing And Computer Vision

CICLUM NE GE RY HAT	IALANG STATE POLYTECHNIC NFORMATION TECHNOLOGY DEPARTMENT TUDY PROGRAM : D4 INFORMATICS ENGINEERING									
	SEMESTER LEARNING PLAN (RPS)									
SUBJECT	C COURSE CULTURE O D E	WEIGHT (credits)/hour	SEMESTER	DATE. PREPARATION						
Digital Image Processing and Computer Vision	R Software Engineering T I 2 0 6 0 6 1	3 credits / 6 hours	2	February 6, 2021						
AUTHORIZATION	RPS Developer Lecturer	MMK Coordinator	Ka PRODI							
Rosa Andrie Asmara, ST., MT., Dr. Eng Cahya Rahmad, ST., M.Kom., Dr. Eng Agung Nugroho Pramudhita, ST, MT Kadek Suarjuna Batubulan, S.Kom., MT Mustika Mentari, S.Kom., M.Kom Milyun Ni'ma Shoumi, S.Kom., M.Kom		Yoppy Yunhasnawa, S.ST., M.Sc.	Imam Fahrur Rozi, ST., MT.							
Learning Achievement (CP)	Learning Outcomes of Study Program Graduate	es (CPL-Prodi)								





S	8 Internalize academic values, norms, and ethics.
S	9 Demonstrate a responsible attitude towards work in the field of expertise independently.
PF	P1 Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.),
PF	27 Mastering ICT product development methods to provide the right solutions through one or more application domains
K	 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc). Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.
K	J1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in
	accordance with work competency standards in the field concerned.
κι	J2 Able to demonstrate independent, quality and measurable performance.
Lea	arning Outcomes Graduates charged to courses (CPL-MK)
inr Ab thr Ab no Gr	novative, quality thinking ; le to apply techniques to perform operations on images/images and perform recognition of images/images as an appropriate solution rough one or more application domains ; le to apply the use of image operations to solve problems/projects that use image/video data as input data by internalizing academic values, rms, and ethics ; aduate Learning Outcomes that are charged to courses (CPL-MK Sub)
-	Students are able to create Repositories on Github and Python Notebooks on Google Colaborator (C6)
-	Students are able to apply how to access pixels in images and how to open image files from personal Google Drive (C3)
-	Students are able to explain the basics of the OpenCV library in Python and the color channels in OpenCV and their conversion (C2)
-	Students are able to explain and implement Linear Brightness Transformation, Image Contrast, Inverse Image, Logarithmic Brightness, and types of Grayscale operations using Google Colab (C2, C3)
-	Students can make Gamma Correction applications (C6)
-	Students can create image simulations with the specified image depth (C6)
-	Students can implement denoising using Averaging, image masking using logical operators (C3)





	Students are able to evolution image histograms, histogram equalization, and dithering, and apply them in Dythen programs (C2, C2)
	- Students are able to explain image histograms, histogram equalization, and dithering, and apply them in Python programs (C2, C3)
	- Students are able to explain the concept of Spatial Filters and several types of Spatial Filters (C2)
	- Students can create simple filters using available Kernel filters and perform convolution calculations. (C6)
	- Students are able to explain the concept of Morphology and several Morphology techniques (C2)
	- Students can make several morphology techniques using Python on Google Colab (C6)
	- Students are able to explain the concept of thresholding and apply image thresholding in the program (C2, C3)
	- Students are able to explain the concept of image compression and apply image compression to programs (C2, C3)
	- Students are able to explain the concept of detection and apply or implement image face detection in programs (C2, C3)
	- Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3)
	- Students are able to explain image processing and computer vision projects that have been developed in groups (C2)
Short Course Descriptions	This course discusses the Understanding of Image, Image Format, Quantization, Histogram, Brightness and contrast point operations, Thresholding, Frame operations, Image blending, Transformation of geometric operations
Learning Materials /	1. The basics of image processing include image capture, image modeling, and image processing.
Subjects	2. Introduction to human and computer vision systems, structure of the human eye, adaptation and discrimination of brightness, contrast sensitivity, Weber ratio, Brightness as a function of intensity, mach band patterns, simultaneous contrast, signal time, spatial and spatial temporal, analog and digital, sampling and quantization, image representation, light intensity function. gray level, number of bits and resolution, checkerboard effect and false counting, non-uniform sampling, non-uniform quantization.
	 Image quality improvement: types of image quality improvement techniques, pixel processing, negative images, contrast stretching, thresholding, gray level transformation, gray level slicing, bit plane slicing, histogram equalization, specific equalization histogram, image quality improvement with logical and arithmetic operations.
	4. Image filtering: filtering principles, convolution.
	5. Noise reduction in images: low pass filter, uniform noise, Gaussian noise, salt n paper noise, speckle noise.
	6. Image edge detection: high pass filter, robert operator, prewit operator, sobel operator.





	7. Color image:	color concept, color space, color gamut, and color conversion.					
	8. Extraction of CMYK histogr	color features in images: understanding image color features, obtaining color histograms, RGB histograms, HSV histograms, ams.					
	9. Image shape	feature extraction: edge detection, projection histogram, angle histogram, LBP, and LTP					
	10. Morphology:	the notion of image morphology, element structure, dilation, erosion, opening, closing, hit or miss transform, thinning.					
	11. Image recognition application projects with color features or shape features: selecting project themes that can be completed by image processing, creating system block diagrams, performing feature extraction, carrying out the matching process, observing						
References	Main :						
	19. Rafael C. Gon	zales, Richard E. Woods," Digital Image Processing 3rd edition", Prentice Hall, 2010.					
	Supp orter s:						
	 Rosa Andrie A Wanasanan Faculty of En 	Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9", Department of Computer Engineering Ingineering, Chiang Mai University					
	3. Prof. Dr. Ania 4. Achmad Basu	ti Murni, Dina Chanyati, Skom, " <i>Image Processing Lecture Notes</i> ", Fasilkom UI ki, Nana Ramadijanti, Fadilah Fahrul, " <i>Image Processing Practical Module with C# 2012</i> ", FEPIS-2013					
	5. Nana Ramadi	janti, Achmad Basuki, Fadilah Fahrul, " <i>Image Processing Textbook</i> ", EEPIS-2014					
Instructional Media	Software :	Hardware :					
	OS -	PCs/Laptops					
	WINDOWS,						
	MS.OFFICE,						
	PHOTOSHOP/G						
	IMP, GOUGLE						
Name of Lasturar	1 Poss Andria	Armara ST. MT. Dr. Eng					
	1. RUSA ANUME A	ASTINIA, ST., IVIT., DT. EIIg					
	1 Z. Canya Kanma	IQ, ST., IVI.KOM., Dr. Eng					





		3. Mustika Mentari,	S.Kom., M.Kom					
		4. Milyun Ni'ma Sho	oumi, S.Kom., M.K	om				
Requirer	nents Course	-						
Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weigh t (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Students are able to create Repositories on Github (C6) Students are able to create Python Notebooks in Google Colaborator (C6) Students are able to apply how to access pixels in images (C3) 	 Use of Github and Google Colaboratory Reading and displaying images 	Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 1 : Create a program to implement reading and how to display images in various	1X6X50 "_ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (2 x50')	 By studying the use of Github and Google Colaboratory materials in reading and displaying images students can: Create Repositories on Github Creating a Python Notebook in Google Colaborator Store and access Python Notebook from Google Colaborator Opening Image Files from Code Python Accessing pixels in the image 	Criteria: Scoring criteria rubric Form of assessment: • jobsheets practice • Independen t task	 Understanding of using Github and Google Colaboratory to read and display imagery The accuracy of making the program as the implementatio n of the reading and the procedure for displaying images in several conditions 	2%





			conditions in Python using Google Colab (2 x50') <i>Offline</i>					
2	 Student implement how to open image files from personal Google Drive (C3) Capable student _ explains the basics of the OpenCV library in Python (C2) Capable student _ explain the color channel in OpenCV and its conversion (C2) 	 Use of Numpy and OpenCV Introduction Image Processing Applications 	Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Problem Based Learning (PBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 2 : Create a program for the implementation of using Numpy and OpenCV on Python with Google Colab based on the case given (2 x50') Offline	1X6X50 "_ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (2 x50')	 By studying the materials using Numpy and OpenCV students can: Open image files from personal Google Drive Understand the basics of the OpenCV library in Python and how to use it Understanding the color channels in OpenCV and their conversion and usage 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independe nt task	 Understanding of the concept of using Numpy and OpenCV in Python with Google Colab The accuracy of making the program as an implementatio n of using Numpy and OpenCV on Python with Google Colab 	2 %





3	٠	Student able to	Operations –	Form :	1X6X50 "	By studying simple image operations material	Criteria:	Understanding	2 %
•		explain and	Linear	Online Lectures	_	students can:	Scoring criteria	of the concept	
		implement Linear	Brightness,	(Online)	- Online (Online)	1. Understand and implement Linear	rubric	of Simple	
		Transformation	Contrast,	· · ·	(2 x50')	Transformation Brightness uses Google		Image	
		Brightness using	Inverse,	Learning	Asynchronous \rightarrow	Colab	Form of	Operations –	
		Google Colab (C2,	Logarithmic	methods:	learning videos	2. Understand and implement Image Contrast	assessment:	Linear	
		C3)	Brightness,	Group	- Online (<i>online</i>) (using Google Colab	Practicum	Brightness,	
			and Grayscale	discussion	2 x50') Sync \rightarrow	3. Understand and implement Inverse Image	worksheets	Contrast,	
	٠	Students are able to	Image	Virtual	video	4. Understand and implement Logarithmic		Inverse,	
		explain and	_	Practice Digital	conferencing,	Transformation brightness	 Independe 	Logarithmic	
		implement Image		Module	discussions	5. Understand and implement the types of	nt task	Brightness, and	
		Contrast using		Problem Based	- Structured task (Grayscale operations		Grayscale	
		Google Colab (C2,		Learning (PBL)	2 x50')			Image	
		C3)							
	•	Student is able		Learning				Programming	
	•	understand and		Resources:				precision as	
		implement Inverse		E-learning				implementatio	
		Image (C2_C3)		https://slc.polin				n Simple Image	
		111080 (02) 00)		ema.ac.id/spad				Operations –	
	٠	Students can explain		a/				Linear	
		and implement						Brightness,	
		Logarithmic		Assignment:				Contrast,	
		Transformation		Task 3 : Create				Inverse,	
		Brightness (C2, C3)		a program for				Logarithmic	
	-	Chudanta ann		implementing				Brightness, and	
	•	students can		Simple Image				Grayscale	
		explain and		Operations –				Image In	
		Implement types of		Linear				Python with	
		Grayscale		Brightness,				Google Colab	
		operations (C2, C3)		Contrast,					
				Inverse,					
				Logarithmic					
				Brightness, and					
				Grayscale					
				Image in Python					
				with Google					





			Colab based on a given case (2 x50') <i>Offline</i>					
4	Quiz 1		Form : Online Lectures (Online) Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 4 : Do multiple choice quiz questions online (2 x50') Offline	1X6X50 "_				10%
5	 Students can make Gamma Correction applications (C6) Students can create image simulations with the specified image depth (C6) Students can implement denoising by using 	 Arithmetic and Logic Operations Gamma Correction Image Depth, PSNR, Average Denoising, 	Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module	1X6X50 "_ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions	 By studying Arithmetic and Logic operations material students can: 1. Create a Gamma Correction application 2. Create an image simulation with the specified image depth 3. Perform denoising using Averaging 4. Perform image masking using logical operators 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independe nt task	 Understanding of the concepts of arithmetic and logical operations (Gamma Correction, Image Depth, PSNR, Average Denoising, Image 	2 %





	Averaging (C3)	• Image	Problem Based	- Structured task (Masking)	
	 Students can <i>implement</i> image masking using logical operators (C3) 	Masking	Learning (PBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 5 : Create a program for implementing Arithmetic and Logic operations (Gamma Correction, Image Depth, PSNR, Average Denoising, Image Masking) in Python with Google Colab based on the given cases (2 x50') Offline	2 x50')			 Accuracy of making arithmetic and logical operation programs (Gamma Correction, Image Depth, PSNR, Average Denoising, Image Masking) in Python with Google Colab 	
6	 Students are able to explain about image histograms and apply them in Python programs (C2, C3) Students are able to explain about 	 histograms , Histogram Equalization, Dithering 	Form : Online Lectures (Online) Learning methods: Group discussion	1X6X50 "_ - Online (Online) (2 x50') Asynchronous → learning videos - Online (online) (2 x50') Sync →	 By studying Histogram, Histogram Equalization, Dithering material students can: Have the ability to implement the creation and calculation of histogram calculations, histogram equalization, image dithering in Python language 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets	 Understanding of the concept of Histogram, Histogram Equalization, Dithering The accuracy of making the 	2 %




	histogram equalization and implementing it in a Python program (C2, C3) • Students are able to explain image dithering and apply it in Python programs (C2, C3)	Virtual Practice Digital Module Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 6 : Create a program histogram, histogram equaliziation, dithering in Python with Google Colab	video conferencing, discussions - Structured task (2 x50')		• Independe nt task	program as the implementatio n of Histogram, Histogram Equalization, Image Dithering in Python with Google Colab	
7	 Students are able to explain the concept of Spatial Filter (C2) Students can describe several types of Spatial Filters (C2) Students can create simple filters using available Kernel filters and perform convolution calculations. (C6) Filter Low Filter, High Pas Filter, Point detection Edge Detectio 	(2 x50') Offline v Pass Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Learning Resources: E-learning https://slc.polin	1X6X50 "_ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (2 x50')	 By studying the spatial filter students can: 1. Have the ability to implement Spatial Filter methods Low Pass Filter, High Pass Filter, Point Detection, Line Detection, Edge Detection in the program 	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independe nt task	 understanding about the concept of Spatial Filter Low Pass Filter, High Pass Filter, Point Detection, Line Detection , Edge Detection Manufacturing precision program as implementatio n of Spatial 	2 %





		er a/ A: Ta a Sp Lo Li Li Ec in G (2	ma.ac.id/spad / sssignment: fask 7 : Create program for patial Filters ow Pass Filter, ligh Pass Filter, oint Detection, ine Detection, dge Detection n Python with Google Colab 2 x50') <i>Offline</i>			Filter Low Pass Filter, High Pass Filter, Point Detection, Line Detection, Image Edge Detection in Python with Google Colab	
8	UTS	Fc O (C Le m Se Le R Le R C E- ht er a/ A C C q U C C q U O	orm : Online Lectures Online) earning nethods: <i>Telf Directed</i> <i>earning (SDL)</i> earning tesources: -learning ttps://slc.polin ma.ac.id/spad / assignment: assignment 8 : Do multiple hoice UTS juestions online	1X6X50 " _			20%





			(2 x50') <i>Offline</i>					
9	 Students are able to explain the concept of Morphology (C2) Students can describe several techniques Morphology (C2) Students can create some morphology techniques using Python on Google Colab . (C6) 	 Several image morphology techniques (Erosion, Dilation, Opening, Closing, Top- hat and Bottom-hat Transformatio n, Skeleton, Thickening) 	Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Problem Based Learning (PBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 9 : Create a program for the implementation of the morphology technique in Python with Google Colab based on the case given (2 x50') Offline	1X6X50 "_ - Online (Online) (2 x50') Asynchronous → learning videos - Online (online) (2 x50') Sync → video conferencing, discussions - Structured task (2 x50')	By studying morphology material students can: 1. Have the ability to implement image morphology techniques in Python programs	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets • Independe nt task	 Understanding of the concept of morphology Manufacturing precision program as an implementatio n of image morphology techniques (Erosion, Dilation, Opening, Closing, Top- hat and Bottom-hat Transformatio n, Skeleton, Thickening) of images in Python with Google Colab 	2 %
10	• Students are able to	Global	Form :	1X6X50″_	By studying thresholding material students can:	Criteria:	Understanding	2 %





	 explain the concept of thresholding Students are able to apply image thresholding in the program (C3) 	 Thresholding Object Optimal Thresholding Optimum Thresholding (Otsu's Mehod) Local Thresholding with Moving Averages 	Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Problem Based Learning (PBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 10 : Create a program to implement some thresholding techniques based on the given cases (2 x50') Offline	 Online (Online) (2 x50') Asynchronous → learning videos Online (online) (2 x50') Sync → video conferencing, discussions Structured task (2 x50') 	 Have the ability to implement various thresholding techniques in the program 	Scoring criteria rubric Form of assessment: • Practicum worksheets • Independe nt task	of the concept of image thresholding • Manufacturing precision program as an implementatio n of several image thresholding techniques in Python with Google Colab	
11	 Student is able explain the concept of image compression (C2) Students are able to apply image 	 Basic Image Compression Image compression steps 	Form : Online Lectures (Online) Learning methods:	1X6X50 " _ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos	 By studying image compression material students can: 1. Have the ability to implement various image compression techniques in the program 	Criteria: Scoring criteria rubric Form of assessment: • Practicum	 Understanding of the concept of image compression Understanding of image 	2 %





	compression on program (C3)		Group discussion Virtual Practice Digital Module Problem Based Learning (PBL)	 Online (online) (2 x50') Sync → video conferencing, discussions Structured task (2 x50') 		worksheetsIndepende nt task	compression steps Manufacturing precision program as an implementatio n of several
			Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/				image compression techniques in Python with Google Colab
			Assignment: Task 11 : Create a program for the implementation of several image				
			compression techniques based on a given case (2 x50') <i>Offline</i>				
12	 Students are able to explain the concept of detection (C2) Students are able to apply or implementing image face detection in the 	 Basic Face Detection Scanning Aspects in face detection (Distance between eyes, nose width, 	Form : Online Lectures (Online) Learning methods: Group discussion Virtual	1X6X50 " _ - Online (Online) (2 x50') Asynchronous → learning videos - Online (online) (2 x50') Sync → video	By studying face detection material students can:1. Have the ability to implement image face detection techniques in the program	Criteria: Scoring criteria rubric Form of assessment: • Practicum worksheets	 Understanding 2% of the concept of face detection Understanding of scanning aspects in face detection





	program (C3)	etc.) • Face detection stages • Face Detection Method	Practice Digital Module Problem Based Learning (PBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 1 2 : Create a program for implementation of face detection based on the given case (2 x50') Offline	conferencing, discussions - Structured task (2 x50')	• Independ ent task	 Understanding of face detection steps Understanding of face detection methods Manufacturing precision program as implementatio n of face detection in Python with Google Colab 	
13	Quiz 2		Form : Online Lectures (Online) Learning methods: Self Directed Learning (SDL) Learning Resources: E-learning https://slc.polin	1X6X50 "_			10 %





			ema.ac.id/spad a/ Assignment: Assignment 13 : Do multiple choice quiz questions online (2 x50') Offline					
14 - 16	Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3)	• FinalProject _	Form : Online Lectures (Online) Learning methods: Group discussion Virtual Practice Digital Module Project Based Learning (PjBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 1 4-16 : Students in groups make an implementation of image	1X6X50 "_ - Online (<i>Online</i>) (2 x50') Asynchronous → learning videos - Online (<i>online</i>) (2 x50') Sync → video conferencing, discussions - Structured task (2 x50')	 By creating a project on image processing and computer vision students can: 1. Have the ability to implement applications with image processing techniques and computer vision which have been explained in the previous practicum meeting 	Criteria: Scoring criteria rubric Form of assessment: • Final project application • Final Project Documenta tion	 understanding making Image processing and computer vision applications use techniques that have been taught in previous meetings 	15%





			processing and computer vision from the material that has been taught previously using Python (2 x50') Offline			
17	Students are able to explain image processing and computer vision projects that have been developed in groups (C2)	UAS	Form : Online Lectures (Online) Learning methods: Project Based Learning (PjBL) Learning Resources: E-learning https://slc.polin ema.ac.id/spad a/ Assignment: Task 17 : Students in groups explain an image processing and computer vision	1X6X50 "_		25 %
			project using Python (2 x50') <i>Offline</i>			





Framework Based Programming



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE	COURSE	WEIGHT (credits)/hour	SEMESTER	DATE.					
		CULTURE			PREPARATION					
Framework	RTI206007	Software	3 credits / 6 hours	6 (six)	06 February 2021					
Based		Engineering								
Programming										
AUTHORIZATION	RPS Develop	er Lecturer	MMK Coordinator	Ka PRODI						
	Habibie Ed D	ien, S. Kom., MT	Yoppy Yunhasnawa, S.ST., M.Sc.	Imam Fahrur Rozi, ST., MT.						
	Dimas Wahy	u Wibowo.,ST,MT								
	Meyti Eka Ap	priyani, ST., MT								
	Candrasena S	Setiadi, ST., M.MT								
Learning	Learning Out	tcomes of Study Pro	gram Graduates (CPL-Prodi)							
Achievement	C9 Internalize condemic values, norms, and othics									
(CP)	S8 Interna	ilize academic value	s, norms, and ethics.							
. ,	S9 Demon	istrate a responsible	attitude towards work in the field of expertise independently.							
	PP2 Master	ing ICT product deve	elopment methods to provide the right solutions through one or i	more application domains.						
	KK1 Able to	apply applied math	ematics, computational knowledge (Algorithms, Programming an	nd Databases), engineering so	ience, and					
	engine	ering principles in th	e fields of software development (desktop, web and mobile), cor	nputer networks and other I	CT / science and					
	techno	logy fields (vision - g	raphics, embedded, Information Systems, Intelligent systems, Bu	isiness Intelligence, etc).						
	KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in									
	accorda	ance with work com	petency standards in the field concerned.							
	KU2 Able to	demonstrate indep	endent, quality and measurable performance.							
	Learning Out	tcomes Graduates c	harged to courses (CPL-MK)							





Mastering modern javascript concepts to provide appropriate solutions through web-based application domains; Mastering the use of the ReactJS framework, calling API, react router, using redux, firebase, Laravel backend by applying logical, innovative, quality thinking, and paying attention to academic ethics.

Graduate Learning Outcomes that are charged to courses (CPL-MK Sub)

- Students can explain the concept of modern javascript (C2)
- Students can create variables and other parameters (C6)
- Students can explain ReactJS concepts and create projects using ReactJS (C2, C6)
- Students are able to describe concepts, components, and interactions in reactJS (C2)
- Students are able to install reactrouter (C3)
- Students can explain the concept of reactrouter and state management in redux (C2)
- Students can apply redux in reactapp (C3)
- Students can explain the concept of redux in reactApp and State management with context API (C2)
- Students are able to create case studies (C6)
- Students know and can explain the concept of Global API and firebase (C2)
- Students can create their own firebase (C6)
- Students know and are able to explain the concept of redux thunk in projects , as well as the concept of firebase (C2)
- Students can create CRUD on firebase (C6)
- Students are able to explain and install laravel (C2, C6)
- Students are able to explain the concept of validation in Laravel , as well as the combination of React and Laravel
- Students are able to explain and implement reactJS in large assignments (C2, C3)

Short CourseFramework-Based Programming Course is a course that is expected to provide knowledge and skills in creating web applications using the ReactJSDescriptionsframework, firebase, and the Laravel backend.





Learning	1. Introduction to Mod	lern JavaScript											
Materials /	 Introduction to Modern JavaScript Understand Frontend Development using the ReactJS Javascript Framework 												
Subjects	 Understand Frontend Development using the ReactJS Javascript Framework Understand making Backend using the Laravel Framework 												
	4. Understand the crea	Understand making Backend using the Laravel Framework Understand the creation of a Management Information System using the ReactJS frontend and Laravel backend											
References	Main :	ain :											
	Erank Zammetti, 2020, Full Stack Development Using TypeScript, Beast, Nederic, Webnack, and Decker, Apress												
	1. Frank zammetti. 2020.	run-Stack Development Using TypeScript, React, Node.js, Webpack, and Docker. Apress.											
	Supporters:	upporters:											
	1. Jason Beaird, The principl	es of Beautiful Web Design											
	2. Rian Ariona, Learn HTML	and CSS (Fundamental Tutorial on learning HTML and CSS)											
	3. Adi Hadisaputra, HTML ar	nd CSS Fundamentals from Roots to Leaves											
	4. John Duckett, HTML and (CSS design and build websites											
	5. Glenn Johnson, Programm	ning in HTML 5 with Javascript and CSS 3											
	6. Desrizal, Javascript Guide												
	7. Tutorials Point Simply Eas	y Learning, Java Script Language											
	8. Jonathan Caffer and Karl	Swedberg, Learning Jquery 1.3 (Better Interaction Design and Web development with simple Jawa Script Techniques)											
	9. Andre Pratama, PHP Unco	over – PHP Learning Guide for beginners											
	10. Endy Muhardin, PHP Pro	gramming Fundamentals and MySql Fundamentals											
	11. Bootstrap Tutorial (Simp	ly Easy Learning by Tutorials.com)											
Instructional	Software :	Hardware :											
Media	Visual Studio Code,	PCs/Laptops											
	XAMPP, browser, ReactJS,												
	Node.js, NPM, Git, Laravel												
Name of	Habibie Ed Dien, S. Kom., M	T											
Lecturer	Dimas Wahyu Wibowo.,ST,N	ЛТ											
	Meyti Eka Apriyani, ST., MT												
	Candrasena Setiadi, ST., M.N	ЛТ											
Requirements	Mobile Programming												
Course													





Week	Planned Final Capability (Sub-CP-MK)	Study material (Learning materials)	Learning Forms and Methods	Estimated time	Student Learning Experience	Assessment Criteria & Forms	Assessment Indicator	Weigh t (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	 Student can explain the concept of modern javascript (C2) Students can create variables and other parameters (C6) 	 ModernJavaScr ipt Creating variables using const Creating variables using let Template strings Default parameters Arrow functions Arrow function and this keyword Destructuring objects Destructuring an array Restructuring Spread and rest operators 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of <i>Self Directed</i> <i>Learning (SDL)</i> Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 1 : Create a simple javascript program with variables and parameters (1x50') <i>Offline</i>	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: 1. Create other variables and parameters 2. Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability implementing modern concepts of Javascript Accuracy in completing practicum jobsheet assignments 	1,8





		 Classes constructor and super 						
2	• Students can explain ReactJS concepts and create projects using ReactJS (C2, C6)	 Introduction to ReactJS Simple components Add react to existing projects Create react with create react app 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 2 : Create a Hello World project with ReactJS (1x50') Offline	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: 1. Create a new project using ReactJS 2. Implements Javascript concepts for ReactJS 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement ReactJS Accuracy in completing practicum jobsheet assignments 	1,8
3	 Students are able to describe concepts and component s in reactJS (C2) 	 Stateless component & statefull component Dynamic components use props 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of	1X6X50" - Online (<i>Online</i>) (1x50') Asynchronous → video pembelajaran	 By studying this material students can: Creating simple components with ReactJS Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement components in ReactJS Accuracy in completing practicum jobsheet 	1,8





		 Parent update by child component Lifecycle components 1 & 2 	Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac .id	- Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')			assignments	
			Assignment: Task 3 : Create a simple component with ReactJS (1x50') Offline					
4	 Students are able to explain the concept of interaction in in reactJS (C2) 	 Interaction with the calling api (get) backend Interaction with the summon api backend (fake api) Interaction with the calling api backend (delete) Interaction with the calling api backend (post) Interaction with the invoking api (put) backend 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 4 : Create API interaction with ReactJS	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: Create API interactions with ReactJS Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: Practice jobsheet tasks	 Ability to implement API with ReactJS Accuracy in completing practicum jobsheet assignments 	1,8





			(1x50') Offline					
5	 Students are able to install reactrouter (C3) Students can explain the concept of reactrouter (C2) 	 Introduction to how to install react router Switch between pages with react router Tidy up the folder structure and rename browserrouter Sending params to the react router detail page 	(1x50) OfflineForm :Lectures ,tutorials, andpracticumLearningmethods:Problem BasedLearning (PBL)groupdiscussionsLearningResources:E-learningIms.polinema.ac.idAssignment:Task 5 : Create asimpleapplication withreact routerusing a specificcase study(1x50') Offline	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: 1. Create a simple application with react router 2. Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement react router Accuracy in completing practicum jobsheet assignments 	1,8
6	 Students can explain the concept of state management in redux (C2) 	 Introduction of state management using redux or context Understand the concept of redux (create 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of	1X6X50" - Online (<i>Online</i>) (1x50') Asynchronous → video pembelajaran	 By studying this material students can: 1. Making state management in redux and reactapp 2. Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement state management in redux and reactapp Accuracy in completing practicum 	1,8





	• Students can apply redux in reactapp (C3)	store & reducers) • Understand the concept of redux (dispatch & subscription) • Redux implementation in react app (setup, createStore, reducer)	Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 6 : Make state management in redux and	- Online (online) (3x50') Sync → video conference, diskusi - Structured tasks (2x50')			jobsheet assignments	
7	• Students can explain redux concept in reactApp and State management with context API (C2)	 createStore, reducer) Redux implementation in react app (provider, connect) Deployment of redux on reactApp (reducer separation) State management with context API (consumer) Refactoring Context API with HOC-Context 	state management in redux and reactapp (1x50') Offline Form : Lectures , tutorials, and practicum Learning methods: Problem Based Learning (PBL) group discussions Learning Resources: E-learning Ims.polinema.ac .id	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: 1. Create state management with API context 2. Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement state management with context API Accuracy in completing practicum jobsheet assignments 	1,8





8	Students are	UTS	Task 7 : Create state management with context API using specific case studies (1x50') Offline Practicum Exam	1X6X50″	LITS	Criteria:	UTS	20
5	able to create case studies (C6)	Evaluation on modernJS, reactJS, reactJS and redux components	Learning methods: Problem Based Learning (PBL) Assignment: Task 8 : Implement a case study by leveraging the concepts of modernJS, reactJS, reactJS and redux components			Scoring criteria rubric Form of assessment: Practicum Exam		
9	Students know and can explain the concept of Global API (C2)	 Global API services (GET) Global API Service (post) Global api service (put & delete) React hooks Introduction and implementation 	Form : Lectures , tutorials, and practicum Learning methods: Problem Based Learning (PBL) group	1X6X50" - Online (<i>Online</i>) (1x50') Asynchronous → video pembelajaran - Online (<i>online</i>) (3x50') Sync→ video	 By studying this material students can: Build a simple app using react hooks and global API Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement react hooks and global API Accuracy in completing practicum jobsheet assignments 	1,8





		• React hooks side effects or life cycle hooks	discussions Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 8 : Create a simple application with react hooks and global API using a specific case study (1x50') Offline	conference, diskusi - Structured tasks (2x50')				
10	 Students know and are able to explain the concept of firebase (C2) Students can create their own firebase (C6) 	 Create a firebase project Firebase integration with reactjs project The registration/sign up process uses Firebase Setup redux on the project 	Form : Lectures , tutorials, and practicum Learning methods: Problem Based Learning (PBL) group discussions Learning Resources: E-learning Ims.polinema.ac .id	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: Create a react web application with firebase Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement react js with firebase Accuracy in completing practicum jobsheet assignments 	1,8





			Assignment: Task 9 : Create a react web application with firebase using a specific case study (1x50') Offline					
11	Students know and are able to explain the concept of redux thunk in projects (C2)	 Setup redux thunk on the project Login using firebase Get to know callbacks, promises, and async/await in javascript 	Form : Lectures , tutorials, and practicum Learning methods: Group discussion of Self Directed Learning (SDL) Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 10 : Make login with react and firebase async (1x50') Offline	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 By studying this material students can: Create a login page with react and firebase in async Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement async with react and firebase Accuracy in completing practicum jobsheet assignments 	1,8
12	 Student is able explain the 	 Post/create to firebase database 	Form : Lectures , tutorials, and practicum	1X6X50" - Online (<i>Online</i>)	By studying this material students can: 1. Creating CRUD operations from	Criteria: Scoring criteria rubric	Ability to implement CRUD	1,8





	concept of	• Get/Read		(1x50')	firebase in ReactJS	Form of	operations from	
	firebase (C2)	firebase	Learning	Asynchronous		assessment:	firebase in ReactJS	
		database + react	methods:	\rightarrow video	2. Implement Javascript concepts to	 Practice 		
	 Students can 	js localStorage	Problem Based	pembelajaran	complete the case study		 Accuracy in 	
	create CRUD on firebase (C6)	 js localStorage Put/Update firebase database Delete firebase databases How to setup eslint in javascript and react js 	Problem Based Learning (PBL) group discussions Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 11 : Create CRUD operations from firebase in ReactJS using a specific case	pembelajaran - Online (online) (3x50') Sync → video conference, diskusi - Structured tasks (2x50')		• jobsheet tasks	completing practicum jobsheet assignments	
			(1x50') Offline					
13	Students are able to explain and install laravel (C2, C6)	Laravel Introduction and Installation, Creation of CRUD in Laravel, Login in Laravel	Form : Lectures , tutorials, and practicum Learning methods: Problem Based Learning (PBL) group discussions	1X6X50" - Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi	 By studying this material students can: 1. Creating CRUD operations with the Laravel backend 2. Implement Javascript concepts to complete the case study 	Criteria: Scoring criteria rubric Form of assessment: • Practice • jobsheet tasks	 Ability to implement CRUD operations with the Laravel backend Accuracy in completing practicum jobsheet assignments 	1,8





14	Students are able to explain	Validation In Laravel, Restful	Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 12 : Create CRUD operations with the Laravel backend using a specific case study (1x50') Offline Form : Lectures ,	- Structured tasks (2x50') 1X6X50″	By studying this material students can:	Criteria: Scoring criteria	 Ability to implement 	1,8
	the concept of validation in laravel	API in Laravel	tutorials, and practicum Learning methods: Group discussion Case study Learning Resources: E-learning Ims.polinema.ac .id Assignment: Task 13 : Create validation and Restful API in Laravel	- Online (Online) (1x50') Asynchronous → video pembelajaran - Online (online) (3x50') Sync→ video conference, diskusi - Structured tasks (2x50')	 Creating a validation and Restfull API in Laravel Implement Javascript concepts to complete the case study 	rubric Form of assessment: • Practice • jobsheet tasks	 validation and Restful API in Laravel Accuracy in completing practicum jobsheet assignments 	





15 Students are able to explain the concept of a React + Laravel + MySQL - How to build a CRUD Todo Form : Lectures , tutorials, and tutor	1,8
able to explainMySQL - How toLectures ,Scoring criteriaimplement Reactthe concept of aBuild a CRUD Todotutorials, and- Online (1. Create a simple Todo List applicationrubricfrontend and	
the concept of a Build a CRUD Todo tutorials, and - Online (1. Create a simple Todo List application rubric frontend and	
combination of List App practicum Online) with React and Laravel Laravel Laravel backend	
React and (1x50') Form of	i
Laravel (C2) Learning Asynchronous 2. Implement Javascript concepts to assessment: • Accuracy in	
methods: \rightarrow video complete the case study • Practice completing	
Problem Based pembelajaran practicum	
Learning (PBL) - Online (
group online) (3x50') assignments	
discussions Sync→ video	
conference,	
diskusi	
Learning - Structured	
Resources: tasks (2x50')	
E-learning	
Ims.polinema.ac	
.id	
Assignment:	
Task 14 : Create	
a simple rodo	
List application	
Laraver (1xEO)) Offling	
16 Students are Final project Form: 1X6X50" By studying this material students can: Criteria: Ability to 30	30
able to explain lectures lectures	50
and implement tutorials and - Online (1 Create web applications using React IS rubric React IS	
react IS in large practicum Online)	
assignments (C2. (1x50') 2. Implement Javascript concepts to	
C3) Learning Asynchronous complete the case study eAccuracy in	
methods: \rightarrow video example completing	
Project Based pembelajaran practicum	
Learning (PjBL) - Online (• jobsheet tasks jobsheet	
group online) (1x50') assignments	





			discussions	Sync -> video				
			015005510115	conference				J
				diskusi				1
				Ctructured				J
								1
			Learning	tasks (4x50[°])				l
			Resources:					J
			E-learning					I
			lms.polinema.ac					J
			.id					
			Assignment:					
			Task 15 : Create					J
			a web					J
			annlication with					J
			a specific case					I
			a specific case					J
			(1xEO') Offling					J
17		Boact IS	Dractico Evamo	176760"	Critoria	The accuracy of	25	I
17	UAS	• Reactus	Practice Exams	170720	Criteria:	The accuracy of	25	I
		Firebase	Learning		Scoring criteria	implementing the		J
			mathods		rubric	ReactJS framework		J
		Redux	Dreiset Brood			in a web application		I
			Project Based		Form of			I
			Learning (PjBL)		assessment:			J
			Accianmont		Practicum Exam			J
			Assignment.					J
			IdSK I D. Create					J
			a web					I
			application with					I
			a charitir raca	1			1	
			a specific case					1
			study					
			study (1x50') <i>Offline</i>					





7th semester

Industrial Internship 1 Industrial Internship 2 Thematic KKN Teaching in schools Study Entrepreneurial Activities 1 Independent Project 1

Humanity Project





Semester 8

1. Thesis (YET)

Career development



MALANG STATE POLYTECHNIC

INFORMATION TECHNOLOGY DEPARTMENT

STUDY PROGRAM : D4 INFORMATICS ENGINEERING

SEMESTER LEARNING PLAN (RPS)

SUBJECT	CODE COURSE CULTURE		WEIGHT (credits) / hour	SEMESTER	DATE. PREPARATION		
Career development	RTI198002	GENERAL COURSES (P)	2 credits/4 hours/week	8	August 22, 2021		
AUTHORIZATION	RPS Developer Lec	turer	MMK Coordinator	Ka PRODI			
	Atiqah Nurul Asri,	S.Pd., M.Pd.	Deddy Kusbianto	Imam Fahrur R	ozi, ST., MT.		
	Deddy Kusbianto I	PA, Ir., M.Mkom.	PA, Ir., M.Mkom.				
	Qonitatul Hasanah	i, S.ST, M.Tr.T					
	Rizdania ST., MKo	n.					
	Vit Zuraida, S.Kom	., M.Kom.					
	Adevian Fairuz Pra	tama, S.ST, M.Eng					
	Diana Mayangsari	Ramadhani, S.ST, M.Tr.T					
Learning Achievement (CP)	Learning Outcome	s of Study Program Graduate	s (CPL-Prodi)				
	1. S8: Internalize	academic values, norms, and	ethics.	•			
	2. S9: Demonstra	te a responsible attitude towa	ards work in the field o	f expertise indep	pendently.		
 KK1: Able to apply mathematics and basic en networks and other ICT fields according to defi 			engineering in the fie efined needs.	ld of software d	evelopment (desktop, web and mobile), computer		
	4. KK2: Able to	transform problem solving n	nodels into algorithms	s and transform	algorithms into source programs with the latest		





	programming languages according to the technology platform required in the Software Requirements Specifications (SRS).						
	5. KU1: Able to complete a broad scope of work through the development of application software by applying a variety of appropriate methods, both standard and unfinished.						
	6. KU2: Able to demonstrate quality and measurable performance.						
	7. KU3: Able to prepare accurate and valid process and results reports and communicate them effectively to other parties who need them.						
	8. KU4: Able to work together, communicate, and innovate in their work.						
	9. KU5: Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers under their responsibility.						
	Learning Outcomes Graduates charged to courses (CPL-MK)						
	Understand, identify, and categorize a career according to the stages in Career Development theory, and be able to apply and implement it						
	to themselves						
Short Course Descriptions	This course aims to make students understand Career Development, namely that individuals who enter the world of work need to manage						
	and develop their careers appropriately so that they can achieve career satisfaction and success. Students are also expected to be able to						
	apply the theory of Career Development through the practice of discussing and categorizing careers through individual projects.						
Learning Materials / Subjects	1. Personal Branding						
	2. Informatics Profession						
	3. Career in Organization						
	4. Career of a Freelancer						
	5. Career Management						
	6. Public Speaking						
	7. Career Planning						
	8. Career Development						
	9. John Holland's Career Orientation Theory						
	10. Eugal Schleh S Career Anchor Theory						
	12. Careers in the Industrial Age 4.0						
	13. Internationalization of Career						





		14. N	14. Managerial Cultural Differences Between Countries							
References Main :										
Widvanti, R. (2021), Career M			anagement (Theory, Concept and Practice), Indonesian Science Media.							
	Supporters:				<i>,,</i>	, ,				
Sinambola J.D. (2021). Human Posource Management: Building a solid work team to improve nerformance. Script Forth										
		Jillall	ibela, Er (2021). Human	Resource Manage	ment. Dunu					
Instruct	ional Media	Softw	vare :	Hardware :						
		Micro	osoft Office, LMS, WA, ar	nd Gadgets, Lap	otops, Wifi N	letworks				
		Zoom								
Name o	f Lecturer	Dedd	y Kusbianto PA, Ir., M.N	1kom. –						
		Qonit	atul Hasanah, S.ST, MT.	.Tr.						
		Vit 7	nia ST., IVIKOM. Iraida S Kom M Kom							
		Adev	it Zuraiua, S.Kom, Wi.Kom. Idevian Fairuz Pratama, S.ST. M.Fng							
		Diana	Mayangsari Ramadhar	i, S.ST, M.Tr.T						
Require	ments Course	1.	1. Communication Studies in Organizations							
		2	2 Information Technology Concent							
		Ζ.	mormation recinoic	gy concept						
Week	Planned Final Capabi	lity	Study material	Learning Forms	Estimated	Student Learning	Assessment Criteria &	Assessment Indicator	Rating	
	(Sub-CP-MK)		(Learning materials)	and Methods	time	Experience	Forms		Weight (%)	
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	
(.,	(-/		(0)	(.)	(0)	(0)	(•)	(•)	(0)	
1	1) Get to know the g	oals,	1) Definition of	Lectures,	1x4x45	- Answer	- Accuracy of	- Objectivity and	3 %	
	processes and out	tputs	Personal Branding	Questions and		Personal	explanation	relevance of		
	and outcomes of t		2) How to apply to	Answers,		Branding	- Task completion	explanation		
course			themselves as	Discussions,		Issues for	speed	- Novelty of ideas		
	2) Able to explain th	е	needed	Assignments		themselves		and ideas		
	importance of Per	rsonal								
	Branding and how	/ to								
	apply it to themse	elves								





	according to their potential and needs							
2	Able to explain the various professions in the field of informatics and able to choose the most suitable for himself	 Variety of informatics professions IT Profession Standardization IT professional level 	Lectures, Literature studies, Discussions, Assignments	1x4x45	- Responding to the need for choosing the right profession and expertise related to informatics competencies that must be pursued and mastered	 Accuracy of explanation Task completion speed 	- The accuracy of students explaining related to the choice of profession that will support their future career development	2 %
3	 Understand the rules of career development in organizations Able to find problems and formulate solutions of career development for himself in accordance with organizational rules 	 Career development rules in organizations Various choices of informatics professions that are appropriate and in line with organizational rules 	Lectures, Questions and Answers, Discussions, Assignments	1x4x45	 Responding to the need for choosing the right profession and expertise related to informatics competencies that must be pursued and mastered and in accordance with the 	 Accuracy of explanation Creativity Task completion speed 	 The accuracy of students explaining related to the choice of profession that will support their career development in the organization 	3 %





					organization that oversees them			
4	Able to find problems and formulate solutions for career development for himself as a freelancer according to his potential and competence	 Variety of freelance professions Terms and provisions to become a freelancer 	Lectures, Literature studies, Discussions, Assignments	1x4x45	- Responding to the need for choosing the right profession and expertise related to informatics competencies that must be taken and mastered to become a freelancer	 Accuracy of explanation Creativity Task completion speed 	- The accuracy of students explaining related to the choice of competencies that will support their career development as a freelancer	2 %
5	Understand the stages in career management (career exploration, career goals, career strategies, career assessment)	 Career exploration Career Goals Career Strategy Career Assessment 	Lectures, questions and answers, discussions, assignments	1x4x45	- Answering questions about how students explore themselves and their environment, the desired end result, a series of activities to	 Accuracy of explanation Creativity Task completion speed 	- The accuracy of students in exploring themselves and their environment, the desired end result, a series of activities to achieve goals, and get feedback.	2%





6	 Understand the method of public speaking Know the basics of public speaking Understand the benefits of public speaking in a career 	 The public speaking method The basics of public speaking The benefits of public speaking 	Lectures, Discussions, Assignments	1x4x45	 achieve goals, and get feedback. Answering the question of how students know the methods, basics and benefits of public speaking in a career. 	 Accuracy of explanation Creativity Task completion speed 	- The accuracy of students explaining related methods, basics and benefits of public speaking in a career.	3%
7	 Understand the basic concept of career planning Understand the purpose and benefits of career planning Understand the career planning cycle Understand the role of the organization in individual career planning 	 The basic concept of career planning Purpose and benefits of career planning Career planning cycle The role of organization in individual career planning 	Lectures, discussions, assignments	1x4x45	Answering the question of how students know the concepts, goals, and benefits of career planning and the role of organizations in individual career planning	 Accuracy of explanation Creativity Task completion speed 	- Student creativity in explaining future career planning	2%
8	UTS	Evaluation	Written Exam	1x2x45	-	-	-	30 %
9	 Understand the goals and benefits of career development 	 Career development goals and benefits 	Lectures, discussions, assignments	1x4x45	Answering the question of how students know the goals,	 Accuracy of explanation Creativity 	 Student creativity in explaining 	3%





	• Understand employee	2. Employee			benefits, stages	- Task completion	future career	
	demands regarding	demands			models and	speed	development	
	career development	regarding career			career			
		development			dovelopment			
	 Career development 				uevelopment			
	stage	3. Career			programs			
	Career development	development stage						
	models	1 Career						
	models	development						
	 Career development 	models						
	program	models						
		5. Career						
		development						
		program						
10	• Understand the basic	1) John Holland's	Lectures	1x4x45	- Answering the	- Accuracy of	- The	2%
10	theory of Holland's	career selection	discussions	17 17 13	question of how	explanation	student's	270
	concept	theory (RIASEC)	assignments		students know	capitaliation	accuracy in	
			assignments		the basic	- Creativity	explaining	
	 Understanding the 	2) The characteristics			concepts, kinds	- Task	John	
	characteristics of	of Holland's theory			of	completion	Holland's	
	Holland's theory	3) The strengths and			characteristics	sneed	orientation	
	Inderstand the strengths	weaknesses of			and strengths	speed	theory	
	and weaknesses of	John Holland's			and weaknesses			
	Holland's theory	theory			of John			
	Themana e theory				Holland's			
		4) Research research			theory in			
		on John Holland's			, choosing a			
		theory			career			
		5) The application of			according to			
		John Holland's			personality.			
		theory to the			,/			
							1	





		application of career counseling guidance						
11	 Understand the basic concepts of Edgar Schien Understanding Edgar Schien's anchor theory Understand how to apply Edgar Schien's anchor theory 	 The basic theory of Edgar Schien's concept 8 Schien's anchor theory How to apply anchor theory to prepare a career development plan 	Lectures, discussions, assignments	1x4x45	 Answering the question of how students know the basic concepts, Schien's anchor theory and its application. 	- Task completion speed	- The accuracy of students explaining related to Edgar Schien's anchor theory	3%
12								
13		1)				-	-	
14		1)				-	-	
15		1)				-	-	
16	UAS	Evaluation	Written Exam	1x2x45	-	-	-	35 %
17	Remedy	Revision		1x4x45	-	-	-	-

Industrial Internship 3

Entrepreneurial Activities 2

Independent Project 2





Appendix 3 Course Assessment Plan

ASSESSMENT AND EVALUATION PLAN

SOFTWARE TESTING

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	 Students understand the importance of software testing Students understand when implementing software testing Students understand various software approaches 	Introduction • Explanation of Tasks / Project • Lecture Contract Explanation • Explanation of Assessment • Syllabus Explanation Explanation of software testing	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 1: % Task 2: % Task 3: % Task 4: % Task 5: % Task 6: % Ouiz 1: %
2	• Students are able to understand various software approaches Students are able to distinguish between white box, black box and gray box approaches	Overview of the types of software testing, including: • White box • Black box Gray box	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	ŪTS: %
3	 Students are able to understand the benefits of the white box approach Students are able to understand how to do testing with a white box approach Students are able to define various techniques in the white box approach 	White Box techniques	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	
4		Quiz 1	•	
5	 Students are able to understand the benefits of the black box approach Students are able to understand how to do testing with a black box approach Students are able to define various techniques in the black box approach 	Black Box techniques	 Oral test UTS (8 questions) UAS (2 questions) 	
6	 Students are able to understand the standard provisions of planning documents related to software testing Students are able to make document test plans 	Test Plan document	 Oral test UTS (8 questions) UAS (2 questions) 	





7	• Students are able to define a test scenario on the software to be tested	Fest Scenario document	 Oral test UTS (8 questions) UAS (2 questions) 	
8		UTS		
9	 Students are able to define test cases for each test scenario based on real case studies. Students are able to distinguish between test cases intended for successful conditions and failed conditions. Students are able to define the requirements needed to execute each test case. 	Test case document	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 7: % Task 8: % Task 9: % Task 10: % Task 11: % Task 12: % Quiz 2: % U A S: %
10	 Students understand the concept of bug reporting. Students are able to understand the elements in the bug reporting document. Students are able to create bug reporting documents. 	Bug reports and bug report documents	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
11	 Students understand the concept of testing metrics Students are able to implement testing metrics in the software testing process 4 	Testing metrics 1. Percentage test cases executed 2. Passed test case percentages 3. Failed test case percentage 4. Blocked test case percentage. 5. Number of tests run per time period	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
12	 Students understand the concept of automatic testing in software testing Students know the preparations that must be made before carrying out automatic testing. Students are able to distinguish the use of automatic testing tools in software testing using white box testing and black box testing methods. 	Automatic testing concept	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
13		Quiz 2	1	1





14	• Students are able to apply test scenarios and test cases that have been made in automatic testing tools	Implementation of automatic testing tools using Selenium / Cypress	 Oral test UTS (6 questions) UAS (2 questions) 					
15	• Students are able to make a test report using an automatic testing tool	Testing report using automatic testing	 Oral test UTS (6 questions) UAS (2 questions) 					
16	• Students understand the concept of User Acceptance Testing	User Acceptance Testing	 Oral test UTS (6 questions) UAS (2 questions) 					
17		UAS						
	TOTAL WEIGHT							





	MALANG STATE POLYTECHNIC							
ENNIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT							
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD							
SUBJE	Software Testing							
CODE	RTI204002WEIGHT (credits) / hour2SEMESTER5							
SUPPORTING	M. Afif Hendrawan S.Kom., M.Kom.							
LECTURER								
ASSESSMENT FORMS								
ASSESSMENT TITLE								
Quiz I								
SUB COURSE LEARNING A	ACHIEVEMENTS							
• Students understand th	the importance of software testing							
 Students understand with students understand with students understand with students and students understand with students and students	when implementing software testing							
 Students understand val Students are able to up 	various software approaches							
• Students are able to distinguis	ush between white how black box and gray how approaches							
 Students are able to un Students are able to un 	understand the benefits of the white box approach							
 Students are able to un 	understand how to do white box testing							
• Students are able to define var	various techniques in the white box approach							
DESCRIPTION								
Solve the problems given by the	he lecturer							
WORKING METHOD								
1. Define the problem								
1. Looking for the best solution	m							
2. Describe the solution								
3. Write down the solution proc	ocess (steps).							
4. Make a report on the results of	s of the work							
5. Assignments are done indepe	pendently and collected in softcopy form via e-learning lms.polinema.ac.id							
OUTER FORMAT								
Work Object: problem solving a	g answers							
Output Form: a report containin	ing the results of problem solving in PDF format							
INDICATORS, CRITERIA A	AND WEIGHT ASSESSMENT							
Report format structure: 10%								
Conformity of answers: 50%	Conformity of answers: 50%							
Solution Accuracy : 40%	Solution Accuracy : 40%							




The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 4	30 minutes				
OTHERS REQUIRED:					
REFERENCES					
Myers, GJ; Sandler, C. & Badgett, T. (2012), The art of software testing, John Wiley & Son	s , Hoboken and NJ				





\wedge	MALANG STATE POLYTECHNIC				
ENNIK NE GERIA	INFORMATION 7	ECHNOLOGY DEPARTMENT			
ALL AND A	STUDY PROGRA	M : D4 INFORMATICS ENGINEERING	r r		
		ASSESSMENT M	ETHOD		
SUBJE	Software Testing				
CODE	RTI204002	WEIGHT (credits) / hour 2	SEMESTER	5	
SUPPORTING	M. Afif Hendrawan	S.Kom., M.Kom.			
LECTURER					
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
UTS					
SUB COURSE LEARNING A	CHIEVEMENTS				
• Students are able to unc	derstand the benefits of	of the black box approach			
• Students are able to unc	derstand how to do bla	ack box testing			
• Students are able to def	ine various technique	s in the black box approach			
• Students are able to unc	derstand the standard	provisions of planning documents related to	software testing		
• Students are able to ma	ke document test plar	IS			
• Students are able to def	fine test scenarios on t	he software to be tested			
DESCRIPTION					
Solve the problems given by the	lecturer				
WORKING METHOD					
1. Define the problem					
1. Looking for the best solution					
2. Describe the solution					
3. Write down the solution proce	ess (steps).				
4. Make a report on the results o	n dently and cellected	in aaftaanse fanne sija a laarmin a loog nalinaam	e ee id		
5. Assignments are done indepen	identify and confected	in solicopy form via e-learning mis.polinem	a.ac.iu		
OUTER FORMAT					
Work Object: problem solving a	nswers				
Output Form: a report containing	g the results of proble	m solving in PDF format			
	5 and results of proble				
INDICATORS CRITERIA AND WEICHT ASSESSMENT					
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT			
INDICATORS, CRITERIA A Report format structure: 10%	ND WEIGHT ASSE	SSMENT			
INDICATORS, CRITERIA A Report format structure: 10% Conformity of answers: 50%	ND WEIGHT ASSE	SSMENT			





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 8
 30 minutes

 OTHERS REQUIRED:

 REFERENCES

 Myers, GJ; Sandler, C. & Badgett, T. (2012), *The art of software testing*, John Wiley & Sons, Hoboken and NJ





\wedge	MALANG STATE POLYTECHNIC					
WHIK NE GERI 4	INFORMATION TECHNOLOGY DEPARTMENT					
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE	Software Testing					
CODE	RTI204002WEIGHT (credits) / hour2SEMESTER5					
SUPPORTING	M. Afif Hendrawan S.Kom., M.Kom.					
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING A	ACHIEVEMENTS					
• Students are able to def	lefine test cases for each test scenario based on real case studies.					
• Students are able to dis	listinguish between test cases intended for success and failure conditions.					
• Students are able to del	letine the requirements needed to execute each test case.					
 Students understand index Students are able to up 	ine concept of bug reporting.					
 Students are able to uno Students are able to ma 	nacestand the elements in the bug reporting document.					
 Students are able to ma Students understand the 	the concent of testing metrics					
 Students understand in Students are able to im 	mplement testing metrics in the software testing process					
Students understand the	the concept of automatic testing in software testing					
• Students know the prep	reparations that must be made before carrying out automatic testing.					
• Students are able to dis	listinguish the use of automatic testing tools in software testing using white box testing and black box testing methods.					
DESCRIPTION						
Solve the problems given by the	he lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution	n					
2. Describe the solution						
3. Write down the solution proce	. Write down the solution process (steps).					
4. Make a report on the results of	s of the work					
5. Assignments are done indepen	pendently and collected in softcopy form via e-learning lms.polinema.ac.id					
OUTER FORMAT						
Work Object: problem solving a	ganswers					
Output Form: a report containin	ing the results of problem solving in PDF format					

INDICATORS, CRITERIA AND WEIGHT ASSESSMENT





 Report format structure: 10%

 Conformity of answers: 50%

 Solution Accuracy : 40%

 The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 13
 30 minutes

 OTHERS REQUIRED:

 REFERENCES

 Myers, GJ; Sandler, C. & Badgett, T. (2012), *The art of software testing*, John Wiley & Sons, Hoboken and NJ





\wedge	MALANG STATE POLYTECHNIC				
SANIK NE GERIA	INFORMATION	TECHNOLOGY DEPARTMENT			
ALL	STUDY PROGRA	M : D4 INFORMATICS ENGINEER	NG		
		ASSESSMEN	Г МЕТНОД		
SUBJE	Software Testing				
CODE	RTI204002	WEIGHT (credits) / hour 2	SEMESTER	R 5	
SUPPORTING	M. Afif Hendrawar	n S.Kom., M.Kom.			
LECTURER					
ASSESSMENT FORMS					
UAS					
ASSESSMENT TITLE					
UAS					
SUB COURSE LEARNING A	CHIEVEMENTS				
• Students are able to app	oly test scenarios and	test cases that have been made in automatic	tic testing tools		
• Students are able to ma	ke test reports using	automatic testing tools			
Students understand the	e concept of User Ac	ceptance Testing			
DESCRIPTION					
Solve the problems given by the	lecturer				
WORKING METHOD					
1. Define the problem					
1. Looking for the best solution					
2. Describe the solution					
3. Write down the solution proce	ess (steps).				
4. Make a report on the results o	f the work		. 1		
5. Assignments are done indepen	idently and collected	I in softcopy form via e-learning lms.poli	nema.ac.1d		
OUTER FORMAT					
Work Object: problem solving a	nswers				
Output Form: a report containing	g the results of probl	em solving in PDF format			
INDICATORS, CRITERIA A	ND WEIGHT ASS	ESSMENT			
Report format structure: 10%					
Conformity of answers: 50%					
Solution Accuracy : 40%					
The weight of the Quiz 1 assess	nent is % of 100% o	t the assessment for this course			
IMPLEMENTATION SCHEI	DULE				
Week 17			30 minutes		





OTHERS REQUIRED:

REFERENCES

Myers, GJ; Sandler, C. & Badgett, T. (2012), The art of software testing , John Wiley & Sons , Hoboken and NJ





ASSESSMENT AND EVALUATION PLAN

Project 1

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to understand the concepts and terminology of software development projects Students are able to understand the roles and functions of each personnel associated with the project	Project and project management concepts and terminology Personnel in project management Sample software project	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 1: % Task 2: % Task 3: % Task 4: % Task 5: % Task 6: %
	in software project management	10 Project management knowledge areas	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	UTS: %
3	Students are able to understand integration management 1	Good integration management Making Project Charters Creating a Project Management Plan	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	
4		Quiz 1		
5	Students are able to understand integration management 2	Direction and arrangement of project work Project monitoring and controlling Project closing	 Oral test UTS (8 questions) UAS (2 questions) 	
6	Students are able to understand scope management	Process in scope management WBS	 Oral test UTS (8 questions) UAS (2 questions) 	_
7	Students are able to understand about time management (time management)	Process in time management Network Diagrams Gantt Chart	 Oral test UTS (8 questions) UAS (2 questions) 	
8		UTS		
9	Students are able to understand about cost management (cost management)	The importance of cost management Process in cost management	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 7: % Task 8: % Task 9: % Task 10: %





10	Students are able to understand about quality management (quality management)	The importance of quality management Process in quality management Tools and techniques in quality control	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 11: % Task 12: % Quiz 2: % U A S: %
11	Students are able to understand about human resource management (human resource management)	The importance of human resource management Processes in human resource management Tools and techniques in human resource management	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
12	Students are able to understand about communication management (communication management)	The importance of good communication management Process in communication management Methods for improving communication within projects	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
13				
14	Students are able to understand stakeholder management	The importance of stakeholder management Process in stakeholder management	 Oral test UTS (6 questions) UAS (2 questions) 	
15	Students are able to understand risk management	The importance of risk management Process in risk management Risk identification	 Oral test UTS (6 questions) UAS (2 questions) 	
16	Students are able to understand procurement management	The importance of procurement management Process in procurement management	 Oral test UTS (6 questions) UAS (2 questions) 	
17		UAS		
		100%		





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		STUDI FRUGRA	ASSESSMENT M	r IETHOD		
SUBJE	5	Project 1				
CODE		RTI204002	WEIGHT (credits) / hour 3	SEMEST	ER	4
SUPPOI	RTING	Deddy Kusbianto P	A, Ir., M.Mkom.			
LECTU	RER					
ASSESS	MENI FORMS					
ASSESS	MENT TITLE					
Quiz 1						
SUB CO	URSE LEARNING A	CHIEVEMENTS				
S 5	Respect the diversity of	of cultures, views, rel	igions and beliefs, as well as the opinions or	original findings of oth	ers.	
S6	Working together and	having social sensiti	vity and concern for society and the environ	nent.		
PP2	Mastering ICT produc	t development metho	ds to provide the right solutions through one	or more application do	mains.	
PP3	Mastering documentat	tion techniques and q	uality assurance of ICT products.			
PP5	Mastering knowledge	about quality assurat	nce and occupational safety and health (K3)	principles in ICT produ	et development.	
PP6	Mastering knowledge of oral and written communication techniques using national and international languages.					
KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles					
	in the fields of softwar	re development (desk	top, web and mobile), computer networks an	nd other ICT / science a	nd technology fie	elds (vision - graphics,
VV3	embedded, Informatio	n Systems, Intelliger	t systems, Business Intelligence, etc).	·····		
KKZ	Able to identify and analyze needs, design, realize and test IC1 / science and technology products.					
ККЗ	Able to document and technology products	carry out quality ass	urance in every process of development, use	, modification, mainten	ince and security	of IC1 / science and
KK5	Able to manage resour	rces in the form of ti	ne, human resources, costs for developing IC	CT / science and technol	ogv products by	utilizing project
	management software					
KU1	Able to apply logical,	critical, innovative, o	uality, and measurable thinking in carrying	out specific work in the	r field of experti	se and in accordance with
KII)	work competency standards in the field concerned.					
			ne measurable performance.		1:	
KU5	evaluating work.	fate decisions based (on standard procedures, design specifications	, occupational safety an	a security require	ements in supervising and
KU7	Able to be responsible their responsibility.	e for the achievement	of group work results and supervise and eva	luate the completion of	work assigned to	o workers who are under
KU8	Able to carry out the p	process of self-evaluation	tion of work groups under their responsibilit	y, and able to manage l	arning independ	lently.
KU10	Able to recognize need	ds, adapt and demons	strate ability to continue self-development (li	felong learning).		





DESCRIPTION
Solve the problems given by the lecturer
WORKING METHOD
1. Define the problem
1. Looking for the best solution
2. Describe the solution
3. Write down the solution process (steps).
4. Make a report on the results of the work
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
30 minutes
OTHERS REQUIRED:
REFERENCES
 Study Program Committee, 2013, Project Implementation and Reporting Guidelines, Level II Project Implementation Guidelines, Polynema, Malang.
 Santoso, Nurudin, 2007, Project Management, Teaching Module, Polynema, Malang. Santoso, Nurudin, 2007, Project Management Practicum, Teaching Module, Polynema, Malang.
 Sprague, RH and McNurlin, BC, 2002, Information Systems Management in Practice, 5th edition, Prentice-Hall.





		MALANG STAT	TE POLYTECHNIC			
/	TEKNIK NEGERI AV	INFORMATION	N TECHNOLOGY DEPARTMENT			
(STUDY PROGR	AM : D4 INFORMATICS ENGINEERING Assessment m	ГТИЛЛ		
SUBIE		Project 1	ASSESSMENT	LINUD		
CODE		RTI204002	WEIGHT (credits) / hour 3	SEMESTER		4
SUPPOI	RTING	Deddy Kusbianto	PA, Ir., M.Mkom.			• ·
LECTU	RER					
ASSESS	MENT FORMS					
UTS						
ASSESS	MENTITLE					
	URSELEARNING A	CHIFVEMENTS				
<u>SCD CO</u> S5	Respect the diversity	of cultures, views, i	eligions and beliefs, as well as the opinions or	original findings of others.		
S 6	Working together and	having social sens	itivity and concern for society and the environ	nent.		
PP2	Mastering ICT produc	et development met	hods to provide the right solutions through one	or more application domair	18.	
PP3	Mastering documenta	tion techniques and	quality assurance of ICT products.			
PP5	Mastering knowledge	about quality assur	rance and occupational safety and health (K3) I	principles in ICT product de	velopment.	
PP6	6 Mastering knowledge of oral and written communication techniques using national and international languages.					
KK1 KK2	X1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).					
KK3	Able to document and carry out quality assurance in every process of development use modification maintenance and security of ICT / science and					
	technology products					
KK5	Able to manage resou	rces in the form of	time, human resources, costs for developing IC	T / science and technology	products by	utilizing project
KU1	Able to apply logical,	critical, innovative	, quality, and measurable thinking in carrying	out specific work in their fie	ld of experti	ise and in accordance with
	work competency star	ndards in the field c	oncerned.	1	1	
KU2	Able to demonstrate independent, quality and measurable performance.					
KU5	Able to make appropr evaluating work.	iate decisions based	l on standard procedures, design specifications	, occupational safety and see	curity requir	rements in supervising and
KU7	Able to be responsible their responsibility.	e for the achieveme	nt of group work results and supervise and eva	luate the completion of worl	c assigned to	o workers who are under
KU8	Able to carry out the p	process of self-eval	uation of work groups under their responsibilit	y, and able to manage learni	ng independ	lently.
KU10	Able to recognize nee	ds, adapt and demo	nstrate ability to continue self-development (li	felong learning).		





DESCRIPTION
Solve the problems given by the lecturer
WORKING METHOD
1. Define the problem
1. Looking for the best solution
2. Describe the solution
3. Write down the solution process (steps).
4. Make a report on the results of the work
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
30 minutes
OTHERS REQUIRED:
REFERENCES
 Study Program Committee, 2013, Project Implementation and Reporting Guidelines, Level II Project Implementation Guidelines, Polynema, Malang.
10. Santoso, Nurudin, 2007, Project Management, Teaching Module, Polynema, Malang.
11. Santoso, Nurudin, 2007, Project Management Practicum, Teaching Module, Polynema, Malang.
12. Sprague, RH and McNurlin, BC, 2002, Information Systems Management in Practice, 5th edition,
 Santoso, Nurudin, 2007, Project Management, Teaching Module, Polynema, Malang. Santoso, Nurudin, 2007, Project Management Practicum, Teaching Module, Polynema, Malang. Sprague, RH and McNurlin, BC, 2002, Information Systems Management in Practice, 5th edition, Prentice-Hall.





		MALANG STAT	E POLYTECHNIC			
/	LEKNIK NE GERIA	INFORMATION	TECHNOLOGY DEPARTMENT	~		
(STUDY PROGR	AM : D4 INFORMATICS ENGINEERIN Assessment n	G		
SUBIE		Project 1	ASSESSMENT	METHOD		
CODE		RTI204002	WEIGHT (credits) / hour 3	SEME	STER	4
SUPPOR	RTING	Deddy Kusbianto	PA, Ir., M.Mkom.			
LECTU	RER	5				
ASSESS	MENT FORMS					
Quiz 2						
ASSESS	MENTTITLE					
Quiz 2	UDSE I FADNING A	CHIEVEMENTS				
<u>SUB CO</u> 85	Respect the diversity	of cultures, views, r	eligions and beliefs, as well as the opinions of	r original findings of c	others.	
S6	Working together and	having social sensi	tivity and concern for society and the environ	ment		
PP2	Mastering ICT produc	t development meth	nods to provide the right solutions through or	e or more application	domains.	
PP3	Mastering documenta	tion techniques and	quality assurance of ICT products.			
PP5	Mastering knowledge	about quality assura	ance and occupational safety and health (K3)	principles in ICT prod	luct development.	
PP6	Mastering knowledge	of oral and written	communication techniques using national an	d international languag	jes.	
KK1	K1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).					
KKZ	Able to identify and a	nalyze needs, desigi	n, realize and test IC1 / science and technolo	gy products.		
KK3	Able to document and	l carry out quality as	ssurance in every process of development, us	e, modification, mainte	enance and security	y of ICT / science and
KK5	Able to manage resources in the form of time, human resources, costs for developing ICT / science and technology products by utilizing project					
KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned					
KU2	Able to demonstrate in	ndependent, quality	and measurable performance.			
KU5	Able to make appropr evaluating work.	iate decisions based	on standard procedures, design specification	s, occupational safety	and security requir	rements in supervising and
KU7	Able to be responsible their responsibility.	e for the achievemer	nt of group work results and supervise and ev	aluate the completion	of work assigned to	o workers who are under
KU8	Able to carry out the p	process of self-evalu	ation of work groups under their responsibil	ity, and able to manage	e learning independ	lently.
KU10	Able to recognize nee	ds, adapt and demor	nstrate ability to continue self-development (lifelong learning).		





DESCRIPTION
Solve the problems given by the lecturer
WORKING METHOD
1. Define the problem
1. Looking for the best solution
2. Describe the solution
3. Write down the solution process (steps).
4. Make a report on the results of the work
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
30 minutes
OTHERS REQUIRED:
REFERENCES
 Study Program Committee, 2013, Project Implementation and Reporting Guidelines, Level II Project Implementation Guidelines, Polynema, Malang.
 Santoso, Nurudin, 2007, Project Management, Teaching Module, Polynema, Malang. Santoso, Nurudin, 2007, Project Management Practicum, Teaching Module, Polynema, Malang.
 Sprague, RH and McNurlin, BC, 2002, Information Systems Management in Practice, 5th edition, Prentice-Hall.





	MALANG STATE POLYTECHNIC						
/	LENNIK NE GERINA	INFORMATION TECHNOLOGY DEPARTMENT					
(() STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
GUDU	ASSESSMENT METHOD						
SUBJE		Project 1 PTI204002	WEIGHT (gradits) / hour 3	SEMESTED	1		
SUPPOR	RTING	Deddy Kusbianto	PA Ir M Mkom	SEMILSIEK	4		
LECTU	RER	Deady Russhanto					
ASSESS	MENT FORMS	•					
UAS							
ASSESS	MENT TITLE						
UAS		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
SUB CO	URSE LEARNING A	CHIEVEMENTS					
22	Respect the diversity	of cultures, views,	religions and beliefs, as well as the opinions of	original lindings of others.			
86	Working together and	having social sens	itivity and concern for society and the environ	ment.			
PP2	Mastering ICT produc	et development met	hods to provide the right solutions through one	e or more application domain	18.		
PP3	Mastering documenta	tion techniques and	quality assurance of ICT products.				
PP5	Mastering knowledge about quality assurance and occupational safety and health (K3) principles in ICT product development.						
PP6	Mastering knowledge of oral and written communication techniques using national and international languages.						
KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles					neering principles	
	in the fields of softwa	re development (de	sktop, web and mobile), computer networks a	nd other ICT / science and te	chnology fields (visio	on - graphics,	
KK)	embedded, Information Systems, Intelligent systems, Business Intelligence, etc).						
KK2 VV2	Able to identify and analyze needs, design, realize and test rear / science and technology products.			(
ккэ	Able to document and technology products	a carry out quality a	ssurance in every process of development, use	, modification, maintenance	and security of IC1 /	science and	
KK5	Able to manage resou	rces in the form of	time, human resources, costs for developing I	CT / science and technology	products by utilizing	project	
	management software	;	, , , , , , , , , , , , , , , , , , , ,	65	1 5 8	1 5	
KU1	Able to apply logical,	critical, innovative	, quality, and measurable thinking in carrying	out specific work in their fie	ld of expertise and in	accordance with	
1/1/2	work competency standards in the field concerned.						
KU2	Able to demonstrate in	ndependent, quality	and measurable performance.				
KU5	Able to make appropr evaluating work.	ate decisions base	d on standard procedures, design specifications	s, occupational safety and se	curity requirements in	n supervising and	
KU7	Able to be responsible their responsibility.	e for the achieveme	nt of group work results and supervise and eva	luate the completion of wor	k assigned to workers	s who are under	
KU8	Able to carry out the process of self-evaluation of work groups under their responsibility, and able to manage learning independently.						
KU10	Able to recognize nee	ds, adapt and demo	nstrate ability to continue self-development (la	felong learning).			





DESCRIPTION
Solve the problems given by the lecturer
WORKING METHOD
1. Define the problem
1. Looking for the best solution
2. Describe the solution
3. Write down the solution process (steps).
4. Make a report on the results of the work
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
Meeting 16 30 minutes
OTHERS REQUIRED:
REFERENCES
17. Study Program Committee, 2013, Project Implementation and Reporting Guidelines, Level II Project Implementation Guidelines, Polynema, Malang.
 Santoso, Nurudin, 2007, Project Management, Teaching Module, Polynema, Malang. Santoso, Nurudin, 2007, Project Management Practicum, Teaching Module, Polynema, Malang.
17. Suitess, Huraun, 2007, Hojeet Hungement Hueteun, Feuening House, Forjiteina, Hunang.
 Sprague, RH and McNurlin, BC, 2002, Information Systems Management in Practice, 5th edition, Prentice-Hall.





ASSESSMENT AND EVALUATION PLAN Artificial intelligence

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Able to explain the basic concepts of artificial intelligence and understand how to solve problems based on artificial intelligence (C2) techniques	Introduction to Artificial Intelligence, definitions, reasons for learning, artificial intelligence applications, installing python, refreshing digital theory	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 1: % Task 2: % Task 3: % Task 4: % Task 5: %
2	 Be able to explain the concept of fuzzy reasoning (C2) Be able to explain the difference between fuzzy tsukamoto, sugeno, mamdani 	(Reasoning) : Fuzzy-=>Fuzzy tsukamoto, sugeno, mamdani	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 6: % Quiz 1: % UTS: %
3	Able to apply the concept of fuzzy reasoning (C3)	(Reasoning) : Fuzzy=> Fuzzy application examples for tsukamoto, sugeno, and mamdani	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	_
4		Quiz 1	-	
5	Be able to explain the search strategy (C2)	(Problem Solving) : Searching->Breadth-First Search, Depth-First Search, Best-First Search, Hill Climbing, A*	 Oral test UTS (8 questions) UAS (2 questions) 	
6	Able to apply search strategy (C3)	(Problem Solving): examples of Depth-First Search applications, Hill Climbing	 Oral test UTS (8 questions) UAS (2 questions) 	
7	Able to explain the concept of knowledge representation and agent (C2)	(Knowledge Representation) : Introduction to Knowledge representation, Agent	 Oral test UTS (8 questions) UAS (2 questions) 	
8		UTS		
9	• Be able to explain the concept of forward and backward chaining (C2) Be able to explain the difference between forward and backward chaining (C2)	(Knowledge Representation) : Forwards and Backward Chaining	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 7: % Task 8: % Task 9: % Task 10: % Task 11: %





10	Able to apply forward and backward chaining (C3)	(Knowledge Representation): Examples of Forwards and Backward Chaining applications	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 12: % Quiz 2: % U A S: %
11	 Be able to explain the concept of bayes theory (C2) Be able to solve the problem of a case study using Bayes' theory (C3) 	(Knowledge Representation) : uncertainty of Bayes' theorem + example application of uncertainty of Bayes' theorem	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
12	 Able to explain the concept of ANN (C2) Be able to explain the concept of perceptron Be able to describe the perceptron algorithm in the form of calculations for the OR/AND(C3) case 	(Machine Learning/JST) : Introduction to Supervised, Unsupervised and Reinforcement Learning, Perceptron + examples of perceptron applications, deep learning	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
13		Quiz 2		
14	 Be able to explain the concept of decision tree (C2) Be able to describe the perceptron algorithm in the form of calculations for a case study (C3) 	(Machine Learning/JST): Decision Tree + Example of a Decision Tree application	 Oral test UTS (6 questions) UAS (2 questions) 	
15	 Be able to explain the concept of genetic algorithm (C2) Able to apply genetic algorithm (C3) 	Machine Learning/ANN): Evolutionary Algorithm Genetic Algorithm + Practicum	 Oral test UTS (6 questions) UAS (2 questions) 	
16	 Able to give examples of the application of NLP(C2) Be able to explain the basic concepts of NLP(C2) 	(NLP) : Introduction	 Oral test UTS (6 questions) UAS (2 questions) 	
17		UAS		
		TOTAL WEIGHT		100%





	MALANG STATE POLYTECHNIC				
LENNIK NE GERI 447	INFORMATION TECHNOLOGY DEPARTMENT				
() STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD					
SUBJE	Artificial intelligence				
CODE SUPPORTING	K11213003 WEIGHT (credits) / hour 3 SEMESTER 3 Vielee Al Us did Finders ST. MT				
LECTURER	Vipkas Al Hadid Firdaus, S1,. Mi				
ASSESSMENT FORMS					
Quiz 1					
ASSESSMENT TITLE					
Quiz 1					
SUB COURSE LEARNING A	CHIEVEMENTS				
Learning Outcomes of Study	Program Graduates (CPL-Prodi)				
S8 Internalize academic val	ues, norms, and ethics.				
S9 Demonstrate a responsib	le attitude towards work in the field of expertise independently.				
PP1 Mastering the concepts of	of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science,				
and engineering principl	es in the ICI field in depth.				
solutions in depth.	of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative				
KK1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).					
KK4 Able to utilize intelligen	t computing in the process of solving problems based on analysis and information on ICT products.				
KU1 Able to apply logical, cr. work competency standa	tical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with rds in the field concerned.				
KU2 Able to demonstrate inde	ependent, quality and measurable performance.				
Learning Outcomes Graduat	es charged to courses (CPL-MK)				
Able to understand Problem So	lving, Knowledge Representation, Expert Systems, Natural Language Processing, Uncertainty, Fuzzy Logic, Neural Networks,				
Searching, Planning (C2); Und	erstand various kinds of artificial intelligence algorithms and their application to solve problems in various fields; Able to analyze				
appropriate artificial intelligence	e techniques to solve problems with full responsibility and ethics;				
DESCRIPTION					
Solve the problems given by the	lecturer				
WORKING METHOD					
1. Define the problem					
1. Looking for the best solution					









	MALANG STATE POLYTECHNIC				
LEXALK NE GERI 44	INFORMATION TECHNOLOGY DEPARTMENT				
() STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD					
SUBJE	Artificial intelligence				
CODE SUPPOPTING	K11213003 WEIGHT (credits) / hour 3 SEMESTER 3 Vinter All Ladid Einders ST. MT				
LECTURER	Vipkas Al Hadid Firdaus, S1,. Mi				
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
UTS					
SUB COURSE LEARNING A	CHIEVEMENTS				
Learning Outcomes of Study	Program Graduates (CPL-Prodi)				
S8 Internalize academic val	ies, norms, and ethics.				
S9 Demonstrate a responsib	le attitude towards work in the field of expertise independently.				
PP1 Mastering the concepts of and engineering principle	f applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, sin the ICT field in depth.				
PP4 Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.					
KK1 Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).					
KK4 Able to utilize intelligent	computing in the process of solving problems based on analysis and information on ICT products.				
KU1 Able to apply logical, cri work competency standa	tical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with rds in the field concerned.				
KU2 Able to demonstrate inde	pendent, quality and measurable performance.				
Learning Outcomes Graduate	es charged to courses (CPL-MK)				
Able to understand Problem So	lying Knowledge Representation Expert Systems Natural Language Processing Uncertainty Fuzzy Logic Neural Networks				
Searching, Planning (C2); Unde	erstand various kinds of artificial intelligence algorithms and their application to solve problems in various fields: Able to analyze				
appropriate artificial intelligence techniques to solve problems with full responsibility and ethics;					
DESCRIPTION					
Solve the problems given by the	lecturer				
WORKING METHOD					
1. Define the problem					
1. Looking for the best solution					





. Describe the solution		
. Write down the solution process (steps).		
. Make a report on the results of the work		
. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id		
DUTER FORMAT		
Vork Object: problem solving answers		
Dutput Form: a report containing the results of problem solving in PDF format		
NDICATORS, CRITERIA AND WEIGHT ASSESSMENT		
Report format structure: 10%		
Conformity of answers: 50%		
Solution Accuracy : 40%		
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course		
MPLEMENTATION SCHEDULE		
Veek 8 30 minutes		
OTHERS REQUIRED:		
REFERENCES		
1. Harris C, Michael, 2011, Artificial Intelligence, Marshall Cavendish Benchmark		
2. Norvig, Peter, 2014, Paradigms of Artificial Intelligence Programming: Case Studies in Common Lisp.		
3. Joshi, Prateek, 2017, Artificial Intelligence with Python Second Edition, Packt Publishing Ltd.		

4.

Lieun HE GERT BAT	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SUBJE	Artificial intelligen	Artificial intelligence			
CODE	RTI213003	WEIGHT (credits) / hour	3	SEMESTER	3
SUPPORTING	Vipkas Al Hadid Fi	rdaus, ST,. MT			
LECTURER					
ASSESSMENT FORMS					
Quiz 2					
SSESSMENT TITLE					
Quiz 2	Quiz 2				
SUB COURSE LEARNING A	ACHIEVEMENTS				





Learn	ing Outcomes of Study Program Graduates (CPL-Prodi)
20011	mg outcomes of other, frequences (of 2 from)
S8	Internalize academic values, norms, and ethics.
S9	Demonstrate a responsible attitude towards work in the field of expertise independently.
PP1	Mastering the concepts of applied mathematics, basic ICT knowledge (Algorithms, Programming, Databases, computer networks, etc.), engineering science, and engineering principles in the ICT field in depth.
PP4	Mastering the principles of intelligent computing in logical and mathematical proof techniques (logic & mathematical proof) to generate effective alternative solutions in depth.
KK1	Able to apply applied mathematics, computational knowledge (Algorithms, Programming and Databases), engineering science, and engineering principles in the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics, embedded, Information Systems, Intelligent systems, Business Intelligence, etc).
KK4	Able to utilize intelligent computing in the process of solving problems based on analysis and information on ICT products.
KU1	Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with work competency standards in the field concerned.
KU2	Able to demonstrate independent, quality and measurable performance.
Able to Search approp	o understand Problem Solving, Knowledge Representation, Expert Systems, Natural Language Processing, Uncertainty, Fuzzy Logic, Neural Networks, ing, Planning (C2); Understand various kinds of artificial intelligence algorithms and their application to solve problems in various fields; Able to analyze priate artificial intelligence techniques to solve problems with full responsibility and ethics;
Solve th	e problems given by the lecturer
WORK	ING METHOD
1. Defin	e the problem
1. Look	ing for the best solution
2. Desci	the solution
3. Write	down the solution process (steps).
4. Make	a report on the results of the work
5. Assig	nments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTEF	R FORMAT
Work O	bject: problem solving answers
Output	Form: a report containing the results of problem solving in PDF format
INDIC	ATORS, CRITERIA AND WEIGHT ASSESSMENT
Report f	Format structure: 10%
0 0	

Solution Accuracy : 40%





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course **IMPLEMENTATION SCHEDULE** Week 14 30 minutes **OTHERS REQUIRED:** REFERENCES Harris C, Michael, 2011, Artificial Intelligence, Marshall Cavendish Benchmark
 Norvig, Peter, 2014, Paradigms of Artificial Intelligence Programming: Case Studies in Common Lisp.
 Joshi, Prateek, 2017, Artificial Intelligence with Python Second Edition, Packt Publishing Ltd.

		MALANG STATH	E POLYTECHNIC				
WHIK NE GERIA		INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
			ASS	ESSMENT METHOD			
SUBJE		Artificial intelligen	се				
CODE		RTI213003 WEIGHT (credits) / hour 3 SEMESTER 3					
SUPPO	ORTING	Vipkas Al Hadid Fi	rdaus, ST,. MT				
LECT	URER	_					
ASSES	SMENT FORMS						
UAS							
ASSES	SMENT TITLE						
UAS							
SUB C	OURSE LEARNING A	CHIEVEMENTS					
Learning Outcomes of Study Program Graduates (CPL-Prodi)							
			· · ·		·		
S8 Internalize academic values, norms, and ethics.							
S9 Demonstrate a responsible attitude towards work in the field of expertise independently.							
PP1	PP1 Mastering the concepts of applied mathematics basic ICT knowledge (Algorithms Programming Databases computer networks etc.) engineering science						
	and engineering princip	les in the ICT field in	depth.	, i i o gi mining, i i o gi mi		,,,	
PP4	Mastering the principles	s of intelligent compu	iting in logical and mathematic	al proof techniques (logic	& mathematical proof) to ge	enerate effective alternative	
	solutions in depth.						
KK1	Able to apply applied m	athematics, computa	tional knowledge (Algorithms,	, Programming and Databas	ses), engineering science, an	nd engineering principles in	
	the fields of software development (desktop, web and mobile), computer networks and other ICT / science and technology fields (vision - graphics,						
	embedded, Information Systems, Intelligent systems, Business Intelligence, etc).						
KK4	Able to utilize intelliger	nt computing in the p	rocess of solving problems bas	ed on analysis and informa	tion on ICT products.		





KU1 Able to apply logical, critical, innovative, quality, and measurable thinking in carrying out specific work in their field of expertise and in accordance with
work competency standards in the field concerned.
KU2 Able to demonstrate independent, quality and measurable performance.
Learning Outcomes Graduates charged to courses (CPL-MK)
Able to understand Problem Solving, Knowledge Representation, Expert Systems, Natural Language Processing, Uncertainty, Fuzzy Logic, Neural Networks,
Searching, Planning (C2); Understand various kinds of artificial intelligence algorithms and their application to solve problems in various fields; Able to analyze
appropriate artificial intelligence techniques to solve problems with full responsibility and ethics;
DESCRIPTION
Solve the problems given by the lecturer
WORKING METHOD
1. Define the problem
1. Looking for the best solution
2. Describe the solution
3. Write down the solution process (steps).
4. Make a report on the results of the work
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id
OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
Week 17 30 minutes
OTHERS REQUIRED:
REFERENCES
10. Harris C, Michael, 2011, Artificial Intelligence, Marshall Cavendish Benchmark
11. Norvig, Peter, 2014, Paradigms of Artificial Intelligence Programming: Case Studies in Common Lisp.
12. Joshi, Prateek, 2017, Artificial Intelligence with Python Second Edition, Packt Publishing Ltd.





ASSESSMENT AND EVALUATION PLAN

Research methodology

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students master the basic concepts of	Basic Concepts of Research	Oral test	Task 1: %
	research	• Logical thinking (deductive reasoning,	• Quiz 1 (4 questions)	Task 2: %
		inductive)	• UTS (6 questions)	Task 3: %
		• Research methods and research	• UAS (2 questions)	Task 4: %
		methodology		Task 5: %
		Methodological benefits		Task 6: %
		Research process		Quiz 1: %
2	Students are able to do <i>a literature review</i>	• Understanding	Oral test	UTS: %
		• Benefit	• Quiz 1 (4 questions)	
		• steps	• UTS (6 questions)	
		• sources	• UAS (2 questions)	
		Citation		
3	Students are able to identify problems	• Identification and formulation of the	Oral test	
		problem	• Quiz 1 (4 questions)	
		 problem formulation steps 	• UTS (6 questions)	
		• Example of problem formulation	• UAS (2 questions)	
		Research hypothesis		
4]		
5	Students are able to create a framework	• Identify the main ideas in the framework	Oral test	
		• Pouring out the basics of literacy reference	• UTS (8 questions)	
		• Determine the methods that are	• UAS (2 questions)	
		appropriate to the research		
		Build stages of research		
6	Students master research methods,	• Instrument	Oral test	
	techniques and instruments	• Interview	• UTS (8 questions)	
		• Questionnaire	• UAS (2 questions)	
		Designing a Questionnaire		
7	Students understand the principle of	Quantitative research	Oral test	
	analyzing quantitatively	• problem formulation in quantitative	• UTS (8 questions)	
		research	• UAS (2 questions)	
		• Variable		
		Validity and reliability		
		Data collection		
		Quantitative data analysis		
		Frequency distribution		





		Cross tabulation				
		• Correlation				
		Regression				
8	UTS					
9	Students understand the principle of analyzing qualitatively	 Qualitative research problem formulation in qualitative research Qualitative data Qualitative data analysis Sample in qualitative research Differences in quantitative and qualitative research 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 7: % Task 8: % Task 9: % Task 10: % Task 11: % Task 12: % Quiz 2: %		
10	Students understand writing skills	 Planning and preparation for writing Word order Break up long sentences Compose paragraphs and sentences Concise, avoid redundancy Avoid ambiguity and obscurity Clarify who does what Highlight your discoveries Protection against criticism Describe in your own words, avoid plagiarizing/paraphrasing 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 			
11	Students understand writing skills	 Planning and preparation for writing Word order Break up long sentences Compose paragraphs and sentences Concise, avoid redundancy Avoid ambiguity and obscurity Clarify who does what Highlight your discoveries Protection against criticism Describe in your own words, avoid plagiarizing/paraphrasing 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 			
12	Students understand writing skills	 Planning and preparation for writing Word order Break up long sentences Compose paragraphs and sentences Concise, avoid redundancy 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 			





		• Avoid ambiguity and obscurity	
		Clarify who does what	
		Highlight your discoveries	
		Protection against criticism	
		Describe in your own words, avoid	
		plagiarizing/paraphrasing	
13		Quiz 2	
14	Students are able to understand how to	• Title	Oral test
	write the right according to the parts of	• Abstract	• UTS (6 questions)
	the paper	Introduction	• UAS (2 questions)
		• Literature review	
		• Methodology	
		• Results	
		Discussion	
		Conclusion	
		• Reference	
		• Award (acknowledgment)	
		Helpful phrases	
15	Students are able to understand how to	• Title	Oral test
	write the right according to the parts of	• Abstract	• UTS (6 questions)
	the paper	Introduction	• UAS (2 questions)
		• Literature review	
		Methodology	
		• Results	
		Discussion	
		Conclusion	
		• Reference	
		• Award (acknowledgment)	
		Helpful phrases	
16	Students are able to understand how to	• Title	Oral test
	write the right according to the parts of	• Abstract	• UTS (6 questions)
	the paper	Introduction	• UAS (2 questions)
		• Literature review	
		Methodology	
		• Results	
		Discussion	
		Conclusion	
		• Reference	
		• Award (acknowledgment)	





	Helpful phrases	
17	UAS	
	TOTAL WEIGHT	100%





	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT					
STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD					
SUBJE Research methodology				7		
SUPPORT	TING	KIII0/003 Ulla Delfana Rosic	WEIGHT (creans) / nour 2		SEWIESTER	1
LECTUR	ER	Olla Dellalla Rosia	un, 51., W1., D1.			
ASSESSM	IENT FORMS					
Quiz 1						
ASSESSM	IENT TITLE					
Quiz 1						
SUB COU	IRSE LEARNING A	CHIEVEMENTS				
Learning	g Outcomes of Study	Program Graduat	es (CPL-Prodi)			
S8	Internalize academic	values, norms, and e	ethics.			
S9	Demonstrate a respon	sible attitude toward	ls work in the field of expertise ind	dependently.		
PP6	Mastering knowledge	of oral and written	communication techniques using n	national and internationa	l languages.	
KU2	Able to demonstrate i	ndependent, quality	and measurable performance.			
KU5	Able to make appropr	iate decisions based	on standard procedures, design sp	pecifications, occupation	al safety and security requir	ements in
	supervising and evalu	ating work.				
KU9	Able to document, sto	ore, secure, and retri	eve data to ensure validity and prev	vent plagiarism.		
Learning	g Outcomes Graduat	es charged to cours	ses (CPL-MK)			
Able to u	nderstand the concept	of introductory rese	earch;			
Able to cl	hoose research topics	and preliminary stu	dies;			
Able to fo	ormulate problems and	d hypotheses;				
Be able to	Be able to choose a research approach;					
Being abl	Being able to choose variables;					
Able to determine data sources;						
Able to collect data analyze data and draw conclusions:						
Able to compile research reports in a systematic, quality and measurable manner:						
DESCRIP	DESCRIPTION					
Solve the p	Solve the problems given by the lecturer					
WORKING METHOD						
1. Define the	1. Define the problem					
1. Looking	g for the best solution					





2. Describe the solution			
3. Write down the solution process (steps).			
4. Make a report on the results of the work			
5. Assignments are done independently and collected in softcopy form via e-learning lms.pol	inema.ac.id		
OUTER FORMAT			
Work Object: problem solving answers			
Output Form: a report containing the results of problem solving in PDF format			
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT			
Report format structure: 10%			
Conformity of answers: 50%			
Solution Accuracy : 40%			
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course			
IMPLEMENTATION SCHEDULE			
Week 4	30 minutes		
OTHERS REQUIRED:			
REFERENCES			
4. Zainal A. Hasibuan, Research Methodology in the Field of Computer Science and Ir	Iformation Technology Concepts, Techniques, and Applications, Filkom UI, 2007		
5. Adrian Wallwork, English for Writing Research Papers, Springer, 2011			
6. Rudy Ariyanto et al, Guidelines for Writing Final Reports and Thesis Version 2.3, Department of Information Technology, State Polytechnic of Malang, 2017			





MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT						
STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD					
SUBJE Research methodology			7			
SUPPORTING	IIIIa Delfana Rosi	ani ST MT Dr	SEVIESTER			
LECTURER		ani, 51., 1411., DI.				
ASSESSMENT FORMS	1					
UTS						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING A	ACHIEVEMENTS					
Learning Outcomes of Study	y Program Graduat	es (CPL-Prodi)				
S8 Internalize academic	values, norms, and	ethics.				
S9 Demonstrate a respon	nsible attitude towar	ds work in the field of expertise independently.				
PP6 Mastering knowledg	e of oral and written	communication techniques using national and i	nternational languages.			
KU2 Able to demonstrate	independent, quality	and measurable performance.				
KU5 Able to make approp	oriate decisions based	l on standard procedures, design specifications,	occupational safety and security re-	quirements in		
supervising and eval	uating work.					
KU9 Able to document, st	ore, secure, and retri	eve data to ensure validity and prevent plagiaris	sm.			
Learning Outcomes Gradua	tes charged to cour	ses (CPL-MK)				
Able to understand the concept	ot of introductory res	earch;				
Able to choose research topics	s and preliminary stu	dies;				
Able to formulate problems ar	nd hypotheses;					
Be able to choose a research a	pproach;					
Being able to choose variables;						
Able to determine data sources;						
Able to collect data analyze data and draw conclusions:						
Able to compile research reports in a systematic, quality and measurable manner:						
DESCRIPTION	DESCRIPTION					
Solve the problems given by the	e lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						





2. Describe the solution				
. Write down the solution process (steps).				
4. Make a report on the results of the work				
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id				
DUTER FORMAT				
Work Object: problem solving answers				
Dutput Form: a report containing the results of problem solving in PDF format				
NDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
Report format structure: 10%				
Conformity of answers: 50%				
Solution Accuracy : 40%				
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course				
IMPLEMENTATION SCHEDULE				
Week 8 30 minutes				
OTHERS REQUIRED:				
REFERENCES				
1. Zainal A. Hasibuan, Research Methodology in the Field of Computer Science and Information Technology Concepts, Techniques, and Applications, Filkom UI, 2007				
2. Adrian Wallwork, English for Writing Research Papers, Springer, 2011				
3. Rudy Ariyanto et al, Guidelines for Writing Final Reports and Thesis Version 2.3, Department of Information Technology, State Polytechnic of Malang, 2017				





MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT						
STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD					
SUBJE Research methodology				7		
SUPPOPTING	KIII8/005	weight (creats) / nour 2	SEMESTER			
LECTURER	Ulla Dellalla Rosia	III, 51., W11., D1.				
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING	ACHIEVEMENTS					
Learning Outcomes of Stud	y Program Graduat	es (CPL-Prodi)				
S8 Internalize academi	c values, norms, and e	ethics.				
S9 Demonstrate a resp	onsible attitude toward	is work in the field of expertise independently.				
PP6 Mastering knowled	ge of oral and written	communication techniques using national and	international languages.			
KU2 Able to demonstrate	e independent, quality	and measurable performance.				
KU5 Able to make appro	priate decisions based	on standard procedures, design specifications	occupational safety and security requ	airements in		
supervising and eva	luating work.					
KU9 Able to document, s	tore, secure, and retri	eve data to ensure validity and prevent plagiari	sm.			
Learning Outcomes Gradu	ates charged to cours	ses (CPL-MK)				
Able to understand the conce	pt of introductory rese	earch;				
Able to choose research topic	s and preliminary stu	dies;				
Able to formulate problems a	nd hypotheses;					
Be able to choose a research Being able to choose variable	Be able to choose a research approach;					
Able to determine data sources:						
Able to determine and arrange research instruments:						
Able to collect data, analyze data, and draw conclusions;						
Able to compile research reports in a systematic, quality and measurable manner;						
DESCRIPTION	DESCRIPTION					
Solve the problems given by the lecturer						
1 Define the problem						
1. Looking for the best solution						





2. Describe the solution				
. Write down the solution process (steps).				
4. Make a report on the results of the work				
5. Assignments are done independently and collected in softcopy form via e-learning lms.pol	inema.ac.id			
OUTER FORMAT				
Work Object: problem solving answers				
Output Form: a report containing the results of problem solving in PDF format				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
Report format structure: 10%				
Conformity of answers: 50%				
Solution Accuracy : 40%				
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course				
IMPLEMENTATION SCHEDULE				
Week 13	30 minutes			
OTHERS REOUIRED:				
REFERENCES				
4. Zainal A. Hasibuan, Research Methodology in the Field of Computer Science and Information Technology Concepts, Techniques, and Applications, Filkom UI, 2007				
5. Adrian Wallwork, English for Writing Research Papers, Springer, 2011				
6. Rudy Ariyanto et al, Guidelines for Writing Final Reports and Thesis Version 2.3, D	epartment of Information Technology, State Polytechnic of Malang, 2017			




,	ANIK NE GERIA	MALANG STAT	E POLYTECHNIC				
C	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD						
SUBJE Research methodology							
CODE \		RTI187005	WEIGHT (credits) / hour 2	SEMESTER	7		
SUPPOR	RTING	Ulla Delfana Ros	ani, ST., MT., Dr.				
LECTUR	KEK MENT EODMS						
HAS							
ASSESS	MENT TITLE						
UAS							
SUB CO	URSE LEARNING A	CHIEVEMENTS					
Learnir	ng Outcomes of Study	Program Gradua	tes (CPL-Prodi)				
S8	Internalize academic	values, norms, and	ethics.				
S9	Demonstrate a respon	sible attitude towa	ds work in the field of expertise independentl	у.			
PP6	Mastering knowledge	of oral and writter	communication techniques using national an	d international languages.			
KU2	Able to demonstrate i	ndependent, quality	and measurable performance.				
KU5	Able to make appropr	riate decisions base	d on standard procedures, design specification	s, occupational safety and security	requirements in		
	supervising and evalu	ating work.					
KU9	Able to document, sto	ore, secure, and retr	ieve data to ensure validity and prevent plagia	rism.			
Learnin	ng Outcomes Graduat	es charged to cou	rses (CPL-MK)				
Able to	understand the concept	of introductory res	earch;				
Able to	choose research topics	and preliminary stu	idies;				
Able to	formulate problems and	d hypotheses;					
Be able	to choose a research ap	proach;					
Being a	ble to choose variables;	,					
Able to	determine data sources	; 	to.				
Able to	collect data analyze da	research instrument	ls,				
Able to	Able to connect data, analyze data, and draw conclusions; Able to compile research reports in a systematic, quality and measurable manner:						
Able to complie research reports in a systematic, quarty and measurable manner,							
DESCRI	PTION						
Solve the	problems given by the	lecturer					
WORKI	NG METHOD						
1. Define	the problem						
1. Lookir	ig for the best solution						





2. Describe the solution					
3. Write down the solution process (steps).					
4. Make a report on the results of the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.poline	ema.ac.id				
OUTER FORMAT					
Work Object: problem solving answers					
Output Form: a report containing the results of problem solving in PDF format					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Report format structure: 10%					
Conformity of answers: 50%					
Solution Accuracy : 40%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 17 3	0 minutes				
OTHERS REQUIRED:					
REFERENCES					
7. Zainal A. Hasibuan, Research Methodology in the Field of Computer Science and Info	rmation Technology Concepts, Techniques, and Applications, Filkom UI, 2007				
8. Adrian Wallwork, English for Writing Research Papers, Springer, 2011					
9. Rudy Ariyanto et al, Guidelines for Writing Final Reports and Thesis Version 2.3, Dep	partment of Information Technology, State Polytechnic of Malang, 2017				





ASSESSMENT AND EVALUATION PLAN

Image Processing and Computer Vision

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	• Students are able to create	Use of Github and Google Colaboratory	Oral test	Task 1: %
	Repositories on Github (C6)	Reading and displaying images	• Quiz 1 (4 questions)	Task 2: %
	• Students are able to create Python		• UTS (6 questions)	Task 3: %
	Notebooks in Google Colaborator (C6)		• UAS (2 questions)	Task 4: %
	• Students are able to apply how to			Task 5: %
	access pixels in images (C3)			Task 6: %
				Quiz 1: %
2	• Student implement how to open	 Use of Numpy and OpenCV 	Oral test	UTS: %
	image files from personal Google	 Introduction Image Processing 	• Quiz 1 (4 questions)	
	Drive (C3)	Applications	• UTS (6 questions)	
	• Capable student _ explains the basics		• UAS (2 questions)	
	of the OpenCV library in Python (C2)			
	• Capable student _ explain the color			
	channel in OpenCV and its conversion			
	(C2)			
3	• Student able to explain and	• Operations – Linear Brightness, Contrast,	Oral test	
	implement Linear Transformation	Inverse, Logarithmic Brightness, and	• Quiz 1 (4 questions)	
	Brightness uses Google Colab (C2,	Grayscale Image	• UTS (6 questions)	
			• UAS (2 questions)	
	• Students are able to explain and			
	implement Image Contrast using			
	Google Colab (C2, C3)			
	• Student is able understand and			
	implement Inverse Image (C2, C3)			
	• Students can explain and implement			
	D i 14 (C2 C2)			
	Brightness (C2, C3)			
	• Students can explain and implement			
4	types of Olayscale operations (C2, C3)	Ouiz 1		-
	Students can make Gamma Correction	Arithmetic and Logic Operations	• Oral tast	4
5	• Students can make Gamma Correction	Gamma Correction	• UTE (9 questions)	
	• Students can create image simulations	Image Denth	• UIS (8 questions)	
	with the specified image depth (C6)	- mage Depui,	• UAS (2 questions)	
	 Students can implement depoising by 	DOND		
	using Averaging (C3)	O PSNK,		
	using Avoluging (CJ)			





	• Students can implement image masking using logical operators (C3)	Average Denoising,Image Masking		
6	 Students are able to explain about image histograms and apply them in Python programs (C2, C3) Students are able to explain about histogram equalization and implementing it in a Python program (C2, C3) Students are able to explain image dithering and apply it in Python programs (C2, C3) 	 histograms , Histogram Equalization, Dithering 	 Oral test UTS (8 questions) UAS (2 questions) 	
7	 Students are able to explain the concept of Spatial Filter (C2) Students can describe several types of Spatial Filters (C2) Students can create simple filters using available Kernel filters and perform convolution calculations. (C6) 	 Filter Low Pass Filter, High Pass Filter, Point detection , Line Detection, Edge Detection 	 Oral test UTS (8 questions) UAS (2 questions) 	
8	•	UTS		
9	• Students are able to explain the	• Several image morphology techniques	Oral test	Task 7: %
	 Students can describe several techniques Morphology (C2) Students can create some morphology techniques using Python on Google Colab. (C6) 	(Erosion, Dilation, Opening, Closing, Top-hat and Bottom-hat Transformation, Skeleton, Thickening)	 Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 8: % Task 9: % Task 10: % Task 11: % Task 12: % Quiz 2: %
10	 Students can describe several techniques Morphology (C2) Students can create some morphology techniques using Python on Google Colab . (C6) Students are able to explain the concept of thresholding Students are able to apply image thresholding in the program (C3) 	 (Erosion, Dilation, Opening, Closing, Top-hat and Bottom-hat Transformation, Skeleton, Thickening) Global Thresholding Object Optimal Thresholding Optimum Thresholding (Otsu's Mehod) Local Thresholding with Moving Averages 	 Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 8: % Task 9: % Task 10: % Task 11: % Task 12: % Quiz 2: % U A S: %





12	 Students are able to explain the concept of detection (C2) Students are able to apply or implement image face detection on programs (C3) 	 Basic Face Detection Scanning Aspects in face detection (Distance between eyes, nose width, etc.) Face detection stages Face Detection Method 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
13		Quiz 2		
14	Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3)	FinalProject _	 Oral test UTS (6 questions) UAS (2 questions) 	
15	Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3)	FinalProject _	 Oral test UTS (6 questions) UAS (2 questions) 	
16	Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3)	FinalProject _	 Oral test UTS (6 questions) UAS (2 questions) 	
17		UAS		
I		TOTAL WEIGHT		100%





	MALANG STA	ГЕ РОLYTECHNIC				
WHIK NE GERIA	INFORMATIO	N TECHNOLOGY DEPARTMENT				
	STUDY PROGI	RAM : D4 INFORMATICS ENGINEERING				
ASSESSMENT METHOD						
SUBJE	Image Processing	g And Computer Vision				
CODE	RTI196006	WEIGHT (credits) / hour 3	SEMESTER	6		
SUPPORTING LECTURER	Rosa Andrie Asn	nara, ST., MT., Dr. Eng.				
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 1						
SUB COURSE LEARNING A	ACHIEVEMENTS					
- Students are able to create	Repositories on Git	hub and Python Notebooks on Google Colabor	ator (C6)			
- Students are able to apply h	now to access pixels	s in images and how to open image files from p	ersonal Google Drive (C3)			
- Students are able to explain	the basics of the C	penCV library in Python and the color channel	s in OpenCV and their conversion (C2)		
- Students are able to explain	1 and implement Lir	near Brightness Transformation, Image Contras	t, Inverse Image, Logarithmic Brigh	tness, and types of Grayscale operations using		
Google Colab (C2, C3)						
- Students can make Gamma	Correction applica	tions (C6)				
- Students can create image s	simulations with the	e specified image depth (C6)				
- Students can implement de	noising using Avera	aging, image masking using logical operators ((3)			
- Students are able to explain	1 image histograms.	histogram equalization, and dithering, and app	ly them in Python programs (C2, C3)	3)		
- Students are able to explain	the concept of Spa	itial Filters and several types of Spatial Filters ((2)			
- Students can create simple	filters using availab	ble Kernel filters and perform convolution calcu	Co			
- Students are able to explain	the concept of Mo	rphology and several Morphology techniques ((2)			
- Students can make several	morphology technic	ques using Python on Google Colab (C6)				
- Students are able to explain	the concept of three the concept of three	esholding and apply image intersholding in the p	to gram $(C2, C3)$			
- Students are able to explain	the concept of fina	action and apply ar implement image face deter	to programs $(C2, C3)$			
- Students are able to explain	nent the material an	d practicum that has been given in the form of	mage processing and computer visit	on projects in the program $(C3)$		
Students are able to explain ima	- Students are able to implement the material and practicum that has been given in the form of image processing and computer vision projects in the program (C3) Students are able to explain image processing and computer vision projects that have been developed in groups (C2)					
DESCRIPTION	ige processing and	computer vision projects that have been develo				
Solve the problems given by the	e lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	of the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						





OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
Week 4 30 minutes
OTHERS REQUIRED:
REFERENCES
Main :
1. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition", Prentice Hall, 2010.
Supporters:
6. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises", ISBN: 978-602-6695-90-1, Polinema Press 2018
7. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering
, Faculty of Engineering, Chiang Mai University
8. Prof. Dr. Aniati Murni, Dina Chahyati, SKom, "Image Processing Lecture Notes ", Fasilkom UI
9. Achmad Basuki, Nana Ramadijanti, Fadilah Fahrul, "Image Processing Practical Module with C# 2012 ", EEPIS-2013
10. Nana Ramadijanti, Achmad Basuki, Fadilah Fahrul, "Image Processing Textbook", EEPIS-2014





	MALANG STAT	E POLYTECHNIC				
NHIK NE GERIA	INFORMATION	TECHNOLOGY DEPARTMENT				
	STUDY PROGR	AM : D4 INFORMATICS ENGINEERING	r r			
ASSESSMENT METHOD						
SUBJE	Image Processing	And Computer Vision				
CODE	RTI196006	WEIGHT (credits) / hour 3	SEMESTER	6		
SUPPORTING LECTURER	Rosa Andrie Asma	ra, ST., MT., Dr. Eng.				
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING A	CHIEVEMENTS					
- Students are able to create	Repositories on Gith	ub and Python Notebooks on Google Colabor	ator (C6)			
- Students are able to apply h	now to access pixels	n images and how to open image files from p	ersonal Google Drive (C3)			
- Students are able to explain	n the basics of the Op	enCV library in Python and the color channel	s in OpenCV and their conversion	(C2)		
- Students are able to explain	and implement Line	ear Brightness Transformation, Image Contras	t, Inverse Image, Logarithmic Brig	the state of Grayscale operations using		
Google Colab (C2, C3)	~					
- Students can make Gamma	Correction applicati	ons (C6)				
- Students can create image s	simulations with the	specified image depth (C6)				
- Students can implement de	noising using Averag	ging, image masking using logical operators ((3)			
- Students are able to explain	i image histograms, l	histogram equalization, and dithering, and app	ly them in Python programs ($C2, C$	(3)		
- Students are able to explain	the concept of Spat	al Filters and several types of Spatial Filters (C2)			
- Students can create simple	filters using availabl	e Kernel filters and perform convolution calcu	C2			
- Students are able to explain	the concept of Mor	bhology and several Morphology techniques ((2)			
- Students can make several	morphology techniq	les using Python on Google Colab (Co)	(62,62)			
- Students are able to explain	the concept of three	notating and apply image thresholding in the p	to gram $(C2, C3)$			
- Students are able to explain	the concept of image	tion and apply or implement image face date	to programs $(C2, C3)$			
- Students are able to implem	ent the material and	practicum that has been given in the form of	mage processing and computer vis	sion projects in the program $(C3)$		
Students are able to explain ima	ige processing and co	practicult that has been given in the form of	and in groups (C2)	sion projects in the program (C3)		
DESCRIPTION	ige processing and et	inputer vision projects that have been develo				
Solve the problems given by the	e lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	of the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						





OUTER FORMAT					
Work Object: problem solving answers					
Output Form: a report containing the results of problem solving in PDF format					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Report format structure: 10%					
Conformity of answers: 50%					
Solution Accuracy : 40%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 8 30 minutes					
OTHERS REQUIRED:					
REFERENCES					
Main :					
2. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition", Prentice Hall, 2010.					
Supporters:					
11. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises", ISBN: 978-602-6695-90-1, Polinema Press 2018					
12. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1.2.9". Department of Computer Engineering					
Faculty of Engineering Chiang Mai University					
13. Prof. Dr. Anjati Murni, Dina Chabyati, SKom, "Image Processing Lecture Notes", Fasilkom UI					
14. Achmad Basuki, Nana Ramadijanti, Fadilah Fahrul, "Image Processing Practical Module with C# 2012", EEPIS-2013					
15. Nana Ramadijanti, Achmad Basuki, Fadilah Fahrul, "Image Processing Textbook", EEPIS-2014					





	MALANG STAT	E POLYTECHNIC				
WHIK NE GERIA	INFORMATION	TECHNOLOGY DEPARTMENT				
and the state	STUDY PROGR	AM : D4 INFORMATICS ENGINEERING				
ASSESSMENT METHOD						
SUBJE	Image Processing	And Computer Vision				
CODE	RTI196006	WEIGHT (credits) / hour 3	SEMESTER	6		
SUPPORTING LECTURER	Rosa Andrie Asma	ra, ST., MT., Dr. Eng.				
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING A	CHIEVEMENTS					
- Students are able to create I	Repositories on Gith	ub and Python Notebooks on Google Colaboration	ator (C6)			
- Students are able to apply h	ow to access pixels	in images and how to open image files from p	ersonal Google Drive (C3)			
- Students are able to explain	the basics of the Op	enCV library in Python and the color channel	s in OpenCV and their conversion	(C2)		
- Students are able to explain	and implement Line	ear Brightness Transformation, Image Contras	t, Inverse Image, Logarithmic Brig	htness, and types of Grayscale operations using		
Google Colab (C2, C3)						
- Students can make Gamma	Correction applicati	ons (C6)				
- Students can create image s	imulations with the	specified image depth (C6)				
- Students can implement der	ioising using Averag	ging, image masking using logical operators (C	(3)			
- Students are able to explain	image histograms, l	nistogram equalization, and dithering, and app	ly them in Python programs (C2, C	(3)		
- Students are able to explain	the concept of Spat	al Filters and several types of Spatial Filters (C2)			
- Students can create simple	ilters using availabl	e Kernel filters and perform convolution calcu	lations. (C6)			
- Students are able to explain	the concept of Mor	phology and several Morphology techniques (C2)			
- Students can make several i	norphology techniqu	ies using Python on Google Colab (C6)				
- Students are able to explain	the concept of thres	holding and apply image thresholding in the p	$\operatorname{rogram}\left(\operatorname{C2},\operatorname{C3}\right)$			
- Students are able to explain	the concept of imag	e compression and apply image compression	to programs $(C2, C3)$			
- Students are able to explain	the concept of detec	tion and apply or implement image face detection	tion in programs $(C2, C3)$	\cdot		
- Students are able to implem	ent the material and	practicum that has been given in the form of i	mage processing and computer vis	sion projects in the program (C3)		
DESCRIPTION	ge processing and co	sinputer vision projects that have been develop	bed in groups (C2)			
Solve the problems given by the	lacturar					
WORKING METHOD						
1 Define the problem						
1. Looking for the best solution						
2 Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	f the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						





OUTER FORMAT Work Object: problem solving answers Output Form: a report containing the results of problem solving in PDF format INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main : 3. A fade C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andric Asmara, " Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chapter 1,2,9 ", Department of Computer Engineering Engineering Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chapter 1,2,9 ", Department of Computer Engineering Engineering Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chapter 1,2,9 ", Department of Computer En						
Work Object: problem solving answers Output Form: a report containing the results of problem solving in PDF format INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 OTHERS REQUIRED: REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, " Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Facine Facine Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Facine Facine Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Facine Rest Mainershity	OUTER FORMAT					
Output Form: a report containing the results of problem solving in PDF format INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main :	Work Object: problem solving answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main :	Output Form: a report containing the results of problem solving in PDF format					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 OTHERS REQUIRED: REFERENCES REFERENCES IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						
Report format structure: 10% Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 OTHERS REQUIRED: REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Eaculty of Engineering Chiang Mai University	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers: 50% Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course <u>IMPLEMENTATION SCHEDULE</u> Week 13 OTHERS REQUIRED: REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	Report format structure: 10%					
Solution Accuracy : 40% The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, " Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	Conformity of answers: 50%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main :	Solution Accuracy : 40%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main :						
IMPLEMENTATION SCHEDULE Week 13 30 minutes OTHERS REQUIRED: REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, " Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
Week 13 30 minutes OTHERS REQUIRED:	IMPLEMENTATION SCHEDULE					
OTHERS REQUIRED: REFERENCES Main :	Week 13 30 minutes					
REFERENCES Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, " Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	OTHERS REQUIRED:					
Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University						
Main : 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	REFERENCES					
 3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition ", Prentice Hall, 2010. Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Eaculty of Engineering Chiang Mai University 	Main :					
Supporters: 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University	3. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition", Prentice Hall, 2010.					
 16. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises ", ISBN: 978-602-6695-90-1, Polinema Press 2018 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Eaculty of Engineering Chiang Mai University 	Supporters:					
 17. Wanasanan Thongsongkrit, "Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering Faculty of Engineering Chiang Mai University 	16 Rosa Andrie Asmara "Digital image processing: theory practice and exercises" ISBN: 978-602-6695-90-1 Polinema Press 2018					
Faculty of Engineering Chiang Mai University	17 Wanasanan Thongsongkrit " Lecture Notes Digital Image Processing Chapter 129 " Department of Computer Engineering					
	Faculty of Engineering Chiang Mai University					
18 Prof Dr Anjati Murni Dina Chabyati SKom "Image Processing Lecture Notes" Fasilkom UI	18 Prof Dr Anjati Murni Dina Chahvati SKom "Image Processing Lecture Notes" Fasilkom UI					
19 Achmad Basuki Nana Ramadijanti Fadilah Fahrul "Image Processing Practical Module with C# 2012" FEPIS-2013	19 Achmad Basuki Nana Ramadijanti Fadilah Fahrul "Image Processing Practical Module with C# 2012" FEPIS-2013					
20 Nana Ramadijanti, Achmad Basuki, Fadilah Fahrul "Image Processing Textbook" EEPIS-2014	20 Nana Ramadijanti, Achmad Basuki, Fadilah Fahrul "Image Processing Textbook" EEPIS-2014					





	MALANG STAT	E POLYTECHNIC				
WHIK NE GERIA	INFORMATION	TECHNOLOGY DEPARTMENT				
and the state	STUDY PROGR	AM : D4 INFORMATICS ENGINEERING				
ASSESSMENT METHOD						
SUBJE	Image Processing	And Computer Vision				
CODE	RTI196006	WEIGHT (credits) / hour 3	SEMESTER	6		
SUPPORTING LECTURER	Rosa Andrie Asma	rra, ST., MT., Dr. Eng.				
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS						
SUB COURSE LEARNING A	CHIEVEMENTS					
- Students are able to create I	Repositories on Gith	ub and Python Notebooks on Google Colabor	ator (C6)			
- Students are able to apply h	ow to access pixels	in images and how to open image files from p	ersonal Google Drive (C3)			
- Students are able to explain	the basics of the Op	enCV library in Python and the color channel	s in OpenCV and their conversion	(C2)		
- Students are able to explain	and implement Line	ear Brightness Transformation, Image Contras	t, Inverse Image, Logarithmic Brig	htness, and types of Grayscale operations using		
Google Colab (C2, C3)						
- Students can make Gamma	Correction applicati	ons (C6)				
- Students can create image s	imulations with the	specified image depth (C6)				
- Students can implement der	ioising using Average	ging, image masking using logical operators (C3)			
- Students are able to explain	image histograms, l	nistogram equalization, and dithering, and app	ly them in Python programs (C2, C	23)		
- Students are able to explain	the concept of Spat	ial Filters and several types of Spatial Filters (C2)			
- Students can create simple	filters using availabl	e Kernel filters and perform convolution calcu	lations. (C6)			
- Students are able to explain	the concept of Mor	phology and several Morphology techniques (C2)			
- Students can make several i	norphology techniq	ues using Python on Google Colab (C6)				
- Students are able to explain	the concept of three	holding and apply image thresholding in the p	rogram (C2, C3)			
- Students are able to explain	the concept of imag	e compression and apply image compression	to programs (C2, C3)			
- Students are able to explain	the concept of deter	ction and apply or implement image face detec	tion in programs (C2, C3)			
- Students are able to implem	ent the material and	practicum that has been given in the form of	mage processing and computer vis	tion projects in the program (C3)		
Students are able to explain image processing and computer vision projects that have been developed in groups (C2)						
DESCRIPTION						
Solve the problems given by the	lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	t the work					
5. Assignments are done independent	ndently and collecte	d in softcopy form via e-learning lms.polinem	a.ac.1d			





OUTER FORMAT
Work Object: problem solving answers
Output Form: a report containing the results of problem solving in PDF format
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Report format structure: 10%
Conformity of answers: 50%
Solution Accuracy : 40%
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course
IMPLEMENTATION SCHEDULE
Week 17 30 minutes
OTHERS REQUIRED:
REFERENCES
Main :
4. Rafael C. Gonzales, Richard E. Woods," Digital Image Processing 3rd edition", Prentice Hall, 2010.
Supporters:
21. Rosa Andrie Asmara, "Digital image processing: theory, practice and exercises", ISBN: 978-602-6695-90-1, Polinema Press 2018
22. Wanasanan Thongsongkrit, " Lecture Notes Digital Image Processing Chapter 1,2,9 ", Department of Computer Engineering
, Faculty of Engineering, Chiang Mai University
23. Prof. Dr. Aniati Murni, Dina Chahyati, SKom, "Image Processing Lecture Notes", Fasilkom UI
24. Achmad Basuki, Nana Ramadijanti, Fadilah Fahrul, "Image Processing Practical Module with C# 2012", EEPIS-2013
25. Nana Ramadijanti, Achmad Basuki, Fadilah Fahrul, "Image Processing Textbook", EEPIS-2014





ASSESSMENT AND EVALUATION PLAN Critical Thinking and Problem Solving

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to explain the concept of thinking and reasoning as skills. [C2]	 Thinking as an ability Critical thinking Solution, not a problem 	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 1: % Task 2: % Task 3: % Task 4: % Task 5: %
2	Students are able to explain the basic concepts of critical thinking [C1, C2, C4, C5]	- Claims, assertions, and assertions Assess a claim	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 6: % Quiz 1: % UTS: %
3	Students are able to explain the basic concepts of critical thinking [C1, C2, C4, C5]	- Claims, assertions, and assertions Assess a claim	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	
4		Quiz 1		
5	Students are able to explain basic problem-solving skills. [C1, C2, C3, C5]	 What is meant by problem? How do we solve a problem? Select and use information Process data Methods rather than solutions Problem solving with search Pattern recognition hypotheses, reasons, explanations, and inferences Spatial reasoning Need and Sufficiency Choose and use models Make choices and decisions 	 Oral test UTS (8 questions) UAS (2 questions) 	
6	Students are able to explain basic problem-solving skills. [C1, C2, C3, C5]	 What is meant by problem? How do we solve a problem? Select and use information Process data Methods rather than solutions Problem solving with search 	 Oral test UTS (8 questions) UAS (2 questions) 	





7		 Pattern recognition hypotheses, reasons, explanations, and inferences Spatial reasoning Need and Sufficiency Choose and use models Make choices and decisions What is meant by problem? 	Oral test	
	Students are able to explain basic problem-solving skills. [C1, C2, C3, C5]	 How do we solve a problem? Select and use information Process data Methods rather than solutions Problem solving with search Pattern recognition hypotheses, reasons, explanations, and inferences Spatial reasoning Need and Sufficiency Choose and use models Make choices and decisions 	 UTS (8 questions) UAS (2 questions) 	
8		UTS		-
9	Students are able to explain and use basic problem solving skills [C2, C3, C6]	 Inference Explanation Proof Credibility Critical thinking and science Present long arguments Apply analytical skills Critical evaluation Respond with a more in-depth argument 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 7: % Task 8: % Task 9: % Task 10: % Task 11: % Task 12: % Quiz 2: % U A S: %
10	Students are able to explain and use basic problem solving skills [C2, C3, C6]	 Inference Explanation Proof Credibility Critical thinking and science Present long arguments Apply analytical skills Critical evaluation Respond with a more in-depth argument 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	





11	Students are able to explain and develop the concept of Applied Critical Thinking [C2, C4, C5, C6]	 Unite abilities - use imagination Develop models Carry out investigations Data analysis and inference 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 			
12	Students are able to explain and use advanced problem solving skills [C2, C3]	 Using a mathematical method Graphical method Probability, tree diagrams, and decision trees 	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 			
13		Quiz 2				
14	Students are able to explain and apply critical reasoning. [C2, C6]	 Terms and Conditions Common sense and validity Non-deductive reasoning Reasoning with statistics Decision-making Principle critical writing 	 Oral test UTS (6 questions) UAS (2 questions) 			
15	Students are able to explain and apply critical reasoning. [C2, C6]	 Terms and Conditions Common sense and validity Non-deductive reasoning Reasoning with statistics Decision-making Principle critical writing 	 Oral test UTS (6 questions) UAS (2 questions) 			
16	Students are able to explain and apply critical reasoning. [C2, C6]	 Terms and Conditions Common sense and validity Non-deductive reasoning Reasoning with statistics Decision-making Principle critical writing 	 Oral test UTS (6 questions) UAS (2 questions) 			
17		1				
	TOTAL WEIGHT 100%					





	MA	ALANG STATE	POLYTECHNIC			
ENNIK NEGERI AN	INF	FORMATION T	ECHNOLOGY DEPARTM	ENT		
() STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
ASSESSMENT METHOD						
SUBJE	Criti	tical Thinking and	l Problem Solving	-		
CODE CODE	RTI	1204001	WEIGHT (credits) / hour	2	SEMESTER	4
SUPPORTING LE	CTURER Agu	ung Nugroho Pran	nudhita, ST, MT			
ASSESSMENT FO	RMS					
Quiz l						
ASSESSMENT TT	TLE					
Quiz I						
SUB COURSE LEA	ARNING ACHI	IEVEMENTS	• • • • • • • • •	C 11 1 1		
Mastering the conception	of thinking and	d problem solving	; independently able to identi	ty problems and needs, p	erform analysis, gather inform	mation, think logically, critically, and
innovatively in solvi	ng simple problei	ems by considering	g values, norms, and ethics	1.11 [00]		
SUB-CPMIK I	Students are able	e to explain the con	ncept of thinking and reasonin	1g as skills. [C2]		
SUD-CPWIK 2	Students are able	e to explain the basis	sic concepts of critical tilliking	$\frac{19}{12}$ [C1, C2, C4, C5]		
SUD-CPWIK 5	Students are able	e to explain basic p	broblem-solving skills. [C1, C	$\frac{12, 03, 03}{100, 02, 001}$		
SUD-CPWIK 4	Students are able	e to explain and us	se basic problem solving skins	<u>Critical Thinking [C2_C</u>	4 C5 C6	
SUD-CPWIK 5	MK 5 Students are able to explain and develop the concept of Applied Critical Thinking [C2, C4, C5, C6]					
SUB CDMK 7	WK 0 Students are able to explain and use advanced problem solving skills [C2, C5]					
DESCRIPTION	Students are able	e to explain and ap	pry critical reasoning. [C2, C	0]		
DESCRIPTION Solve the mehleme	irran hrr tha lastr					
Solve the problems g	given by the lectu	urer				
1 Define the problem						
1. Define the problem	II set solution					
2 Describe the solut	ion					
3 Write down the so	lution process (st	stens)				
4. Make a report on t	the results of the	work				
5. Assignments are d	one independent	tly and collected in	n softcopy form via e-learning	g lms.polinema.ac.id		
OUTER FORMAT						
Work Object: proble	Work Object: problem solving answers					
Output Form: a report containing the results of problem solving in PDF format						
INDICATORS, CR	ITERIA AND W	WEIGHT ASSES	SSMENT			
Report format structu	ure: 10%					
Conformity of answe	ers: 50%					





Solution Accuracy : 40%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 4	30 minutes				
OTHERS REQUIRED:					
REFERENCES					
Main :					
2. Thinking Skills Critical Thinking and Problem Solving Second edition					
Supporters:					
3. Critical Thinking Skills For Dummies					





MALANG STATE POLYTECHNIC							
INFORMATION TECHNOLOGY DEPART				ENT			
() STUDY PROGRAM : D4 INFORMATICS ENGINEERING							
ASSESSMENT METHOD							
SUBJE	2//	Critical Thinking ar	d Problem Solving				
CODE		RT1204001	WEIGHT (credits) / hour	2	SEMESTER	4	
SUPPORTING LE	ECTURER	Agung Nugroho Pra	imudhita, ST, MT				
ASSESSMENT FO	JRMS						
UIS ACCESSMENT TI							
ASSESSIVIENT II							
	ADNINC A	CHIEVEMENTS					
SUB COURSE LE	ant of thinkin	a and problem solvin	a: independently able to identi	fy problems and peeds n	arform analysis gather inform	mation think logically critically and	
innovatively in solv	ving simple pr	g and problem solvin	ng values norms and ethics	ity problems and needs, p	erform analysis, gather mion	mation, units togicany, enticany, and	
SUB-CPMK 1	Students are	able to explain the c	oncept of thinking and reasoni	ng as skills [C2]			
SUB-CPMK 2	Students are	able to explain the b	asic concepts of critical thinking	$\log \left[C1 \right] C2 C4 C5 C5$			
SUB-CPMK 3	Students are	able to explain basic	problem-solving skills. [C].	C_{2}, C_{3}, C_{5}			
SUB-CPMK 4	Students are	able to explain and u	ise basic problem solving skill	s [C2, C3, C6]			
SUB-CPMK 5	Students are	able to explain and o	levelop the concept of Applied	Critical Thinking [C2, C	4, C5, C6]		
SUB-CPMK 6	SUB-CPMK 6 Students are able to explain and use advanced problem solving skills [C2, C3]						
SUB-CPMK 7	SUB-CPMK 7 Students are able to explain and apply critical reasoning. [C2, C6]						
DESCRIPTION		•					
Solve the problems	given by the	lecturer					
WORKING MET	HOD						
1. Define the proble	em						
1. Looking for the b	pest solution						
2. Describe the solu	ition						
3. Write down the s	olution proce	ess (steps).					
4. Make a report on	the results of	f the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id							
OUTER FORMA	Г						
Work Object: probl	em solving ar	nswers					
Output Form: a repo	Output Form: a report containing the results of problem solving in PDF format						
INDICATORS CI	RITERIA AN	ND WEIGHT ASSE	SSMENT				
Report format struc	ture: 10%						
Conformity of answ	vers: 50%						





Solution Accuracy : 40%					
The weight of the Quiz 1 assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 8	30 minutes				
OTHERS REQUIRED:					
REFERENCES					
Main :					
3. Thinking Skills Critical Thinking and Problem Solving Second edition					
Supporters:					
4. Critical Thinking Skills For Dummies					





MALANG STATE POLYTECHNIC							
ENNIK NE GER	14.4	INFORMATION 7	TECHNOLOGY DEPARTM	ENT			
STUDY PROGRAM : D4 INFORMATICS ENGINEERING							
	ASSESSMENT METHOD						
SUBJE	2//	Critical Thinking an	d Problem Solving	1			
CODE		RTI204001	WEIGHT (credits) / hour	2	SEMESTER	4	
SUPPORTING L	ECTURER	Agung Nugroho Pra	mudhita, ST, MT				
ASSESSMENT F	ORMS						
Quiz 2							
ASSESSMENT T	ITLE						
Quiz 2							
SUB COURSE LI	EARNING A	CHIEVEMENTS					
Mastering the conc	ept of thinkin	g and problem solvin	g; independently able to identi	fy problems and needs, p	erform analysis, gather inforr	mation, think logically, critically, and	
innovatively in solv	ving simple pr	roblems by considerir	ng values, norms, and ethics				
SUB-CPMK 1	Students are	able to explain the co	oncept of thinking and reasoning	ng as skills. [C2]			
SUB-CPMK 2	Students are	able to explain the ba	asic concepts of critical thinkir	ng [C1, C2, C4, C5]			
SUB-CPMK 3	Students are	able to explain basic	problem-solving skills. [C1, C	C2, C3, C5]			
SUB-CPMK 4	Students are	able to explain and u	se basic problem solving skills	s [C2, C3, C6]			
SUB-CPMK 5	Students are	able to explain and d	evelop the concept of Applied	Critical Thinking [C2, C	C4, C5, C6]		
SUB-CPMK 6	PMK 6 Students are able to explain and use advanced problem solving skills [C2, C3]						
SUB-CPMK 7	SUB-CPMK 7 Students are able to explain and apply critical reasoning. [C2, C6]						
DESCRIPTION							
Solve the problems	given by the	lecturer					
WORKING MET	HOD						
1. Define the problem	em						
1. Looking for the	best solution						
2. Describe the solu	ution						
3. Write down the s	solution proce	ess (steps).					
4. Make a report or	the results of	f the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id							
OUTER FORMAT							
Work Object: problem solving answers							
Output Form: a report containing the results of problem solving in PDF format							
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT							
Report format struc	ture: 10%						
Conformity of answ	vers: 50%						





Solution Accuracy : 40%					
The weight of the Quiz I assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 13	30 minutes				
OTHERS REQUIRED:					
REFERENCES					
Main :					
4. Thinking Skills Critical Thinking and Problem Solving Second edition					
Supporters:					
5. Critical Thinking Skills For Dummies					





MALANG STATE POLYTECHNIC							
INFORMATION TECHNOLOGY DEPARTMENT							
() () () () () () () () () ()	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD						
SUBJE	Critical Thinking and Problem Solving						
CODE	RTI204001 WEIGHT (credits) / hour 2 SEMEST	ER 4					
SUPPORTING LECTURER	R Agung Nugroho Pramudhita, ST, MT						
ASSESSMENT FORMS							
UAS							
ASSESSMENT TITLE							
UAS							
SUB COURSE LEARNING A	ACHIEVEMENTS						
Mastering the concept of thinkin	king and problem solving; independently able to identify problems and needs, perform analy	vsis, gather information, think logically, critically, and					
innovatively in solving simple pr	e problems by considering values, norms, and ethics						
SUB-CPMK 1 Students are	are able to explain the concept of thinking and reasoning as skills. [C2]						
SUB-CPMK 2 Students are	are able to explain the basic concepts of critical thinking [C1, C2, C4, C5]						
SUB-CPMK 3 Students are	are able to explain basic problem-solving skills. [C1, C2, C3, C5]						
SUB-CPMK 4 Students are	are able to explain and use basic problem solving skills [C2, C3, C6]						
SUB-CPMK 5 Students are	are able to explain and develop the concept of Applied Critical Thinking [C2, C4, C5, C6]						
SUB-CPMK 6 Students are	are able to explain and use advanced problem solving skills [C2, C3]						
SUB-CPMK 7 Students are	are able to explain and apply critical reasoning. [C2, C6]						
DESCRIPTION							
Solve the problems given by the	the lecturer						
WORKING METHOD							
1. Define the problem							
1. Looking for the best solution)n						
2. Describe the solution							
3. Write down the solution proce	ocess (steps).						
4. Make a report on the results of	s of the work						
5. Assignments are done indepen	pendently and collected in softcopy form via e-learning lms.polinema.ac.id						
OUTER FORMAT							
Work Object: problem solving answers							
Output Form: a report containing	Output Form: a report containing the results of problem solving in PDF format						
INDICATORS, CRITERIA AI	AND WEIGHT ASSESSMENT						
Report format structure: 10%							
Conformity of answers: 50%							





Solution Accuracy : 40%					
The weight of the Quiz I assessment is % of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
Week 17	30 minutes				
OTHERS REQUIRED:					
REFERENCES					
Main :					
5. Thinking Skills Critical Thinking and Problem Solving Second edition					
Supporters:					
6. Critical Thinking Skills For Dummies					





ASSESSMENT AND EVALUATION PLAN

Occupational Health and Safety

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students know the history of OSH development in Indonesia, and are able to explain why K3 needs to be studied by a student.	OSH definition, history of OSH, objectives of OSH, meaning of OSH symbol	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 1: % Task 2: % Task 3: % Task 4: % Task 5: %
2	Students know the legal basis for employment in Indonesia, and are able to explain the policies that underlie employment in Indonesia from each President, are also able to explain the link between employment policies and occupational health and safety (K3).	K3 Legal Basis During Past and Present Governments	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	Task 6: % Quiz 1: % UTS: %
3	Students know the legal basis for Health Requirements for the Work Environment, and understand what is meant by the Physical Work Environment.	Physical work environment Which consists of direct and intermediary physical work environment	 Oral test Quiz 1 (4 questions) UTS (6 questions) UAS (2 questions) 	
4		Quiz 1		
5	Students know the legal basis for the requirements for Occupational Health, and understand what is meant by a Non-Physical Work Environment.	Employee Relations at Work and outside the Workplace	 Oral test UTS (8 questions) UAS (2 questions) 	
6	Students know the factors that affect work safety, Hazard Sources that Potentially Cause Work Accidents, Prevention of work accidents and know work safety equipment.	Hazard Sources and Work Accident Prevention	 Oral test UTS (8 questions) UAS (2 questions) 	
7	Students know the factors that affect work safety, Hazard Sources that Potentially Cause Work Accidents, Prevention of work accidents and know work safety equipment.	Factors Affecting K3	 Oral test UTS (8 questions) UAS (2 questions) 	
8		UTS		
9	Students know the legal basis for implementing occupational health for	OSH Setting Basics	Oral testQuiz 2 (4 questions)	Task 7: % Task 8: %





10	workers, as well as the benefits of pre- employment health checks and post-work health checks Students know the legal basis for	Pre-work Health Examination and After	 UTS (6 questions) UAS (2 questions) Oral test 	Task 9: % Task 10: % Task 11: % Task 12: %
	implementing occupational health for workers, as well as the benefits of pre- employment health checks and post-work health checks	Work Examination	 Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	Quiz 2: % U A S: %
11	Students know what safety equipment must be used at work	Work Safety Tools	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
12	Students know what safety equipment must be used at work	OSH Organizational Definition and Objectives	 Oral test Quiz 2 (4 questions) UTS (6 questions) UAS (2 questions) 	
13		Ouiz 2		
14	Students know the intent and purpose of establishing OSH organizations in Indonesia, and are able to explain the organizational structure of OSH and its duties and functions.	OSH Organizational Structures	 Oral test UTS (6 questions) UAS (2 questions) 	
15	Students know the Legal Basis of Insurance in Indonesia, and are able to explain the function of insurance, types of insurance and know insurance claim procedures	Basic Principles, Types, and Insurance Claims	 Oral test UTS (6 questions) UAS (2 questions) 	
16	Students know about BPJS	Rights, Obligations, and Benefits for BPJS Participants	 Oral test UTS (6 questions) UAS (2 questions) 	
17		UAS		
		TOTAL WEIGHT		100%





	MALANG STATE POLYTECHNIC					
INFORMATION TECHNOLOGY DEPARTMENT						
and the second	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD						
SUBJE	UBJE Occupational Health and Safety					
CODE	RTI211008	WEIGHT (credits) / hour	2	SEMESTER	2	I
SUPPORTING LECTURER	Meyti Eka Apriyar	ii ST., MT.				
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						I
Quiz 1						I
SUB COURSE LEARNING A	CHIEVEMENTS					
Learning Outcomes of Study	Program Graduat	es (CPL-Prodi)				
S8 Internalize academic	values, norms, and e	thics.				
PP5 Mastering knowledge	about quality assura	nce and occupational safety and	d health (K3) principles in	ICT product development.		
KU2 Able to demonstrate i	ndependent, quality	and measurable performance.				
Learning Outcomes Graduat	tes assigned to cour	ses (CPL-MK)				├─── ┓
Mastering the knowledge of th	e principles of occup	bational safety and health (K3);	Able to implement good a	nd quality theories, concept	ts and principles of occupational safety and health	
(K3) in order to improve the h	ealth status of worke	rs by taking into account values	s, norms and ethics.			
DESCRIPTION						
Solve the problems given by the	electurer					
WORKING METHOD						I
1. Define the problem						l
1. Looking for the best solution						I
2. Describe the solution	(+)					I
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	of the work	l in softaany form via a loornin	a lma nalinama aa id			I
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						
OUTER FORMAT						
Work Object: problem solving answers						
Output Form: a report containing the results of problem solving in PDF format						I
super roma e report community de results of problem borring in r Dr roman						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						1
Report format structure: 10%						
Conformity of answers: 50%	Conformity of answers: 50%					
Solution Accuracy : 40%						





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 4
 30 minutes

 OTHERS REQUIRED:

 REFERENCES

 6.
 Budi Harijanto, K3 teaching module, 2012

 7.
 Law no. 1 of 1970 concerning work safety

 8.
 Law no. 13 of 2003 concerning employment

 9.
 Law no. 3 of 1992 (Social security for workers)

 10.
 PP no. 33 of 1977





NK NE GERI	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOCY DEPARTMENT					J
Steen hype	STUDY PROGRAM :	D4 INFORMATICS EN	GINEERING			
ASSESSMENT METHOD						
SUBJE	UBJE Occupational Health and Safety					
CODE	RTI211008 W	'EIGHT (credits) / hour	2	SEMESTER	2	
SUPPORTING LECTURER	Meyti Eka Apriyani ST.	., MT.				
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING A	CHIEVEMENTS					
Learning Outcomes of Study	Program Graduates (C	CPL-Prodi)				,
S8 Internalize academic	values, norms, and ethics.					
PP5 Mastering knowledge	about quality assurance a	and occupational safety and	health (K3) principles in	ICT product development.		
KU2 Able to demonstrate I	ndependent, quality and n	cpi miz				
Learning Outcomes Gradual	es assigned to courses (CPL-MIK)	Able to implement good a	nd quality theories concern	to and minainlag of accumational safety and health	
(K_3) in order to improve the h	e principles of occupation	tal salety and health (K5);	norms and ethics	nd quanty meories, concep	is and principles of occupational safety and health	
DESCRIPTION	cutifi status of workers by	taking into account values	, norms and ethics.			
Solve the problems given by the	lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	f the work					
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						
OUTER FORMAT						
Work Object: problem solving answers						
Output Form: a report containing the results of problem solving in PDF format						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Report format structure: 10%						
Conformity of answers: 50%						
Solution Accuracy : 40%						





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 8
 30 minutes

 OTHERS REQUIRED:

 REFERENCES

 11. Budi Harijanto, K3 teaching module, 2012

 12. Law no. 1 of 1970 concerning work safety

 13. Law no.13 of 2003 concerning employment

 14. Law no.3 of 1992 (Social security for workers)

 15. PP no. 33 of 1977





MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROCEDAM + DA INFORMATICS ENCINEERING						
SEESSMENT METHOD						
SUBIE Occupational Health and Safety						
CODE	RTI211008	WEIGHT (credits) / hour	2	SEMESTER	2	
SUPPORTING LECTURER	Mevti Eka Aprivar	ni ST., MT.	-		-	
ASSESSMENT FORMS		,				
Quiz 2						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING A	CHIEVEMENTS					
Learning Outcomes of Study	Program Graduat	es (CPL-Prodi)				
S8 Internalize academic	values, norms, and e	thics.				
PP5 Mastering knowledge	about quality assura	nce and occupational safety and	d health (K3) principles in	ICT product development.		
KU2 Able to demonstrate f	tos assigned to cour	and measurable performance.				
Mastering the knowledge of the	e principles of occur	vational safety and health (K3):	Able to implement good :	and quality theories concern	ats and principles of occupational safety and health	
(K3) in order to improve the h	ealth status of worke	rs by taking into account values	s, norms and ethics.	and quanty theories, concep	is and principles of occupational safety and health	
DESCRIPTION						
Solve the problems given by the	e lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution	<i>,</i> , ,					
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	of the work	l in actions forme via a loomin	a luna natinama aa id			
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						
OUTER FORMAT						
Work Object: problem solving answers						
Output Form: a report containing the results of problem solving in PDF format						
INDICATORS, CRITERIA A	ND WEIGHT ASS	ESSMENT				
Report format structure: 10%						
Conformity of answers: 50%						
Solution Accuracy : 40%						





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 13
 30 minutes

 OTHERS REQUIRED:

 REFERENCES

 16. Budi Harijanto, K3 teaching module, 2012

 17. Law no. 1 of 1970 concerning work safety

 18. Law no.13 of 2003 concerning employment

 19. Law no.3 of 1992 (Social security for workers)

 20. PP no. 33 of 1977





	MALANG STATE POLYTECHNIC					
INFORMATION TECHNOLOGY DEPARTMENT						
and the second	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD						
SUBJE	UBJE Occupational Health and Safety					
CODE	RTI211008	WEIGHT (credits) / hour	2	SEMESTER	2	
SUPPORTING LECTURER	Meyti Eka Apriyar	ii ST., MT.				
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS						
SUB COURSE LEARNING A	CHIEVEMENTS					
Learning Outcomes of Study	Program Graduat	es (CPL-Prodi)				
S8 Internalize academic	values, norms, and e	thics.				
PP5 Mastering knowledge	about quality assura	nce and occupational safety and	d health (K3) principles in	ICT product development.		
KU2 Able to demonstrate i	ndependent, quality	and measurable performance.		1		
Learning Outcomes Graduat	tes assigned to cour	ses (CPL-MK)				
Mastering the knowledge of th	e principles of occup	pational safety and health (K3);	Able to implement good a	and quality theories, concep	ts and principles of occupational safety and health	
(K3) in order to improve the h	ealth status of worke	rs by taking into account values	s, norms and ethics.			
DESCRIPTION						
Solve the problems given by the	e lecturer					
WORKING METHOD						
1. Define the problem						
1. Looking for the best solution						
2. Describe the solution						
3. Write down the solution proc	ess (steps).					
4. Make a report on the results of	of the work	1 :	- 1			
5. Assignments are done independently and collected in softcopy form via e-learning lms.polinema.ac.id						
OUTED FORMAT						
Work Object: problem solving answers						
Output Form: a report containing the results of problem solving in PDF format						
Supur Form, a report containing the results of problem solving in FDF format						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Report format structure: 10%						
Conformity of answers: 50%						
Solution Accuracy : 40%						





The weight of the Quiz 1 assessment is % of 100% of the assessment for this course

 IMPLEMENTATION SCHEDULE

 Week 17
 30 minutes

 OTHERS REQUIRED:

 Implementation of 1970 concerning module, 2012

 2. Law no. 1 of 1970 concerning employment

 24. Law no.3 of 1992 (Social security for workers)
 25. PP no. 33 of 1977





ASSESSMENT AND EVALUATION PLAN

Mathematics I

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to understand the concept of	Number Type	Quiz 1: 20 questions	Quiz 1: 7.5 %
	types of numbers		Quiz 2: 20 questions	UTS: 30 %
			UTS: 20 questions	Task 1: 10%
			UAS: 40 questions	
2	Students are able to understand Factors and Prime	Factors and Prime Numbers	Quiz 1: 20 questions	
	Numbers		Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
3	Students are able to understand the concept of	Fractions, Ratios and Percentages	Quiz 1: 20 questions	
	Fractions, Ratios, and Percentages		Quiz 2: 20 questions	
	, , , 5		UTS: 20 questions	
			UAS: 40 questions	
4		Quiz 1		
5	Students are able to understand the concept of	Decimal Numbers (division, fraction, comma2)	Quiz 1: 20 questions	
	Decimal Numbers (division, fractions, comma2		Quiz 2: 20 questions	
	numbers)		UTS: 20 questions	
			UAS: 40 questions	
6	Students are able to understand the concept of rank	Rank	Quiz 1: 20 questions	
			Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
7	Students are able to understand the concept of	Number System 1	Quiz 1: 20 questions	
	Number System 1		Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
8		UTS	-	
9	Students are able to understand the concept of	Number System 2	Quiz 1: 20 questions	Quiz 2: 7.5 %
	Number System 2		Quiz 2: 20 questions	Ũ A S: 35 %
			UTS: 20 questions	Task 2: 10%
			UAS: 40 questions	
10	Students are able to understand the concept of	Introduction to Algebra (linear equations,	Quiz 1: 20 questions	
-	Introduction to Algebra (linear equations.	coefficients, constants etc.), Algebraic Powers,	Ouiz 2: 20 questions	
	coefficients constants etc.) Algebraic Banks	Algebraic Factoring	UTS: 20 questions	
	Algebraic Factoring	00	UAS: 40 questions	
	Algeorate Pactoring		· · · · · · · · · · · · · · · · · · ·	





11	Students are able to understand and solve the concept of solving linear equations and polynomials	Solving linear and polynomial equations	Quiz 1: 20 questions Quiz 2: 20 questions UTS: 20 questions UAS: 40 questions	
12	Students are able to understand concepts and draw graphs	Chart	Quiz 1: 20 questions Quiz 2: 20 questions UTS: 20 questions UAS: 40 questions Task 1: 10 questions	
13		Quiz 2		
14	Students are able to understand the concept of combinatorial (factorial, combination, permutation, opportunity)	Combinatorial (factorial, combination, permutation, chance)	Quiz 1: 20 questions Quiz 2: 20 questions UTS: 20 questions UAS: 40 questions	
15	Students are able to understand the concept of Trigonometry (special angles, Pythagorean formula)	Trigonometry (special angles, Pythagorean formula)	Quiz 1: 20 questions Quiz 2: 20 questions UTS: 20 questions UAS: 40 questions	
16	Students are able to understand the concept of Number Series	Number Series	Quiz 1: 20 questions Quiz 2: 20 questions UTS: 20 questions UAS: 40 questions Task 2: 10 questions	
17		UAS		1000/
1		IUIAL WEIGHT		100%0




\wedge	MALANG STATE	POLYTECHNIC					
ANNIK NE GERIA	INFORMATION	FECHNOLOGY DEPARTM	IENT				
ALL AND ALL	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING				
ASSESSMENT METHOD							
SUBJE	Mathematics 1						
CODE	RTI211004	WEIGHT (credits) / hour	2/6	SEMESTER	1		
SUPPORTING	Deasy Sandhya Ely	a Ikawati					
LECTURER							
ASSESSMENT FORMS							
Task 1							
ASSESSMENT TITLE							
Task 1: 10 questions							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to understand t	he concept of solving	g systems of linear equations us	sing the Gauss Seidel , Ga	uss, Gauss Jordan method			
DESCRIPTION							
Answer the assignment question	s provided.						
WORKING METHOD							
Problems are done within 2 hour	s of lessons						
OUTER FORMAT							
Student assignment answers							
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT					
Conformity of answers	: 100%)					
The assessment weight is 10% o	f 100% of the assess	ment for this course					
IMPLEMENTATION SCHEE	DULE						
12th week			150 minutes				
OTHERS REQUIRED:							
REFERENCES							
1. Stroud, KA and Dexter J.,	Engineering Mathem	natics, Palgrave Macmillan, 20	13				
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.							





IN NEGED	MALANG STATE	C POLYTECHNIC	TENT					
Stern Age	INFURMATION STUDY DDOCDA	I ECHNULUGY DEPARTN M • D4 INFODMATICS FN	IEN I ICINEEDINC					
ASSESSMENT METHOD								
SUBIE SUBIE	ASSESSMENT METHOD Mathematics 1							
CODE	RTI211004	WFIGHT (credits) / hour	2/6	SEMESTER	1			
SUPPORTING	Deasy Sandhya Ely	a Ikawati	2/0	SEMESTER	1			
LECTURER	Deusy Sundriyu Ery	a mawati						
ASSESSMENT FORMS								
Task 2								
ASSESSMENT TITLE								
Task 2: 10 questions								
SUB COURSE LEARNING A	ACHIEVEMENTS							
Students are able to understand	the concept of solving	g non-linear equations						
DESCRIPTION								
Answer the assignment question	ns provided.							
WORKING METHOD								
Problems are done within 2 hou	irs of lessons							
OUTER FORMAT								
Student assignment answers								
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT						
Conformity of answers	: 100%)						
	. 1 . 100/ 01							
The assessment weight for Assi	gnment I is 10% of I	00% of the assessment for this	course					
IMPLEMENTATION SCHE	IMPLEMENTATION SCHEDULE							
16th week	16th week 150 minutes							
OTHERS REQUIRED:								
DEFEDENCES								
1 Stroud KA and Davta	r I Engineering Mat	hematics Palarave Macmillan	2013					
2 Munir Rinaldi "Discrete	1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmilian, 2013 2. Munir, Dinaldi, "Discrete Mathematics Ed. 5th Pavision". Informatics Bandung, 2012							





\land	MALANG STATE	POLYTECHNIC						
NHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT							
	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING					
ASSESSMENT METHOD								
SUBJE	Mathematics 1	Mathematics 1						
CODE	RTI211004	WEIGHT (credits) / hour	2/6	SEMESTER	1			
SUPPORTING	Deasy Sandhya Ely	a Ikawati						
LECTURER								
ASSESSMENT FORMS								
Quiz 1								
ASSESSMENT TITLE								
Quiz 1: 20 questions								
SUB COURSE LEARNING A	CHIEVEMENTS							
Students are able to understand	material 1-3							
DESCRIPTION								
Answer the quiz questions provi	ided.							
WORKING METHOD								
Problems are done within 2 hour	rs of lessons							
OUTER FORMAT								
Student quiz answers								
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT						
Conformity of answers	: 100%)						
The assessment weight for Assig	gnment 1 is 7.5% of 1	00% of the assessment for this	s course					
IMPLEMENTATION SCHEI	IMPLEMENTATION SCHEDULE							
4th week			150 minutes					
OTHERS REQUIRED:								
REFERENCES								
1. Stroud, KA and Dexter	J., Engineering Mat	hematics, Palgrave Macmillan	, 2013					
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.								





SUBJE CODE SUPPORTING	Mathematics 1	<u>M : D4 INFORMATICS EN</u> ASS	GINEERING ESSMENT METHOD							
SUBJE CODE SUPPORTING	Mathematics 1	ASS	ESSMENT METHOD	SIUDY PROGRAM : D4 INFORMATICS ENGINEERING						
CODE SUPPORTING	Mathematics I		ASSESSMENT METHOD							
CODE SUPPORTING	RT1211004									
SUPPORTING	R11211004	WEIGHT (credits) / hour	2/6	SEMESTER	1					
	Deasy Sandhya Ely	a Ikawati								
ASSESSMENT FORMS										
Quiz 2										
ASSESSMENT TITLE										
Quiz 2: 20 questions										
SUB COURSE LEARNING	<u>GACHIEVEMENTS</u>									
Students are able to understan	nd material 8 - 12									
DESCRIPTION	• • •									
Answer the quiz questions pro	ovided.									
WORKING METHOD	01									
Problems are done within 2 ho	iours of lessons									
OUTER FORMAT										
Student quiz answers										
INDICATORS, CRITERIA	AND WEIGHT ASS	ESSMENT								
Conformity of answers	: 100%	0								
	0/ 61000/ 64									
The assessment weight is 7.5%	% of 100% of the assess	sment for this course								
INPLEMENTATION SCH	IMPLEMENTATION SCHEDULE									
13th week			150 minutes							
UTHERS REQUIRED:										
1 Stroud VA and Day	ton I. Engineering Mar	homotion Delareuro Masmillan	2012							
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013										
Students are able to understan DESCRIPTION Answer the quiz questions pro WORKING METHOD Problems are done within 2 ho OUTER FORMAT Student quiz answers INDICATORS, CRITERIA Conformity of answers The assessment weight is 7.5% IMPLEMENTATION SCH 13th week OTHERS REQUIRED: REFERENCES 1. Stroud, KA and Dex	nd material 8 - 12 ovided. nours of lessons AND WEIGHT ASSI : 100% % of 100% of the assess IEDULE (ter J. , Engineering Mathematics Ed. 5th	ESSMENT 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	150 minutes							





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Strand By	INFORMATION	TECHNOLOGY DEPARTM	IENT					
	SIUDY PROGRAM : D4 INFORMATICS ENGINEERING							
		ASSESSMENT METHOD						
SUBJE	Mathematics 1							
CODE	RTI211004	WEIGHT (credits) / hour	2/6	SEMESTER	1			
SUPPORTING	Deasy Sandhya Ely	a Ikawati						
LECTURER								
ASSESSMENT FORMS								
UTS								
ASSESSMENT TITLE								
UTS: 20 questions								
SUB COURSE LEARNING A	CHIEVEMENTS							
Students are able to understand 1	material 1-8							
DESCRIPTION								
Answer the UTS questions provi	ided.							
WORKING METHOD								
Problems are done within 2 hour	rs of lessons							
OUTER FORMAT								
UTS student answers								
INDICATORS, CRITERIA A	ND WEIGHT ASSE	CSSMENT						
Conformity of answers	: 100%	,						
The assessment weight is 30% o	f 100% of the assess	nent for this course						
IMPLEMENTATION SCHEDULE								
9th week			150 minutes					
OTHERS REQUIRED:								
REFERENCES								
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013								
2. Munir, Rinaldi, "Discrete I	Mathematics Ed. 5th	Revision", Informatics Bandur	ng, 2012.					





ANIK NE GERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT						
The Area	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING				
ASSESSMENT METHOD							
SUBJE	Mathematics 1						
CODE	RTI211004	WEIGHT (credits) / hour	2/6	SEMESTER	1		
SUPPORTING	Deasy Sandhya Ely	a Ikawati					
LECTURER							
ASSESSMENT FORMS							
UAS							
ASSESSMENT TITLE							
UAS: 40 questions							
SUB COURSE LEARNING A	ACHIEVEMENTS						
Students are able to understand	the material from me	etings 1-16					
DESCRIPTION							
Answer the assignment question	ns provided.						
WORKING METHOD							
Problems are done within 2 hou	irs of lessons						
OUTER FORMAT							
UAS student answers							
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT					
Conformity of answers	: 100%)					
	21222						
The assessment weight is 35% of	of 100% of the assess	ment for this course					
IMPLEMENTATION SCHE	IMPLEMENTATION SCHEDULE						
17th week	17th week 150 minutes						
OTHERS REQUIRED:							
REFERENCES							
KEFERENCES	T. T. 1. 1. 1. 1.		0012				
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013							
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.							





Math 3

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to understand and find	- The general Eclidean formula	Quiz 1: 20 questions	Quiz 1: 7.5 %
	solutions from general formula case	The general formula for Cityblocks	Quiz 2: 20 questions	UTS: 30 %
	studies 1		UTS: 20 questions	Task 1: 10%
			UAS: 40 questions	
2	Students are able to understand and find	 Minkowski's general formula 	Quiz 1: 20 questions	
	solutions from general formula 2 case	Chebyshev's general formula	Quiz 2: 20 questions	
	studies		UTS: 20 questions	
			UAS: 40 questions	
3	Students are able to understand the	Introduction to Statistics (data, mean,	Quiz 1: 20 questions	
	definitions and formulas for data, mean,	median, mode)	Quiz 2: 20 questions	
	median, mode		UTS: 20 questions	
			UAS: 40 questions	
4		Quiz 1		
5	Students are able to understand the	- Definition	Quiz 1: 20 questions	
	definition of a graph and are able to	- Graph Type	Quiz 2: 20 questions	
	perform calculations with a mathematical	Graph Terminology	UTS: 20 questions	
	graph		UAS: 40 questions	
	8-1			
6	Students are able to understand the	- Tree definition	Quiz 1: 20 questions	
	definition of a tree and are able to perform	- Spaning Tree	Quiz 2: 20 questions	
	mathematical tree calculations	- Rooted tree	UTS: 20 questions	
		- Ordered tree	UAS: 40 questions	
		- n-ary tree		
		Binary Tree		
				-
7	Students are able to know the definition of	Scalar and Vector Quantity	Quiz 1: 20 questions	
	Scalar and Vector Quantity		Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	4
8		UTS		
9	Students are able to represent Vectors,	Vector and its components	Quiz 1: 20 questions	Quiz 2: 7.5 %
	Components of a Given Vector		Quiz 2: 20 questions	U A S: 35 %
			UTS: 20 questions	Task 2: 10%
			UAS: 40 questions	





10	Students are able to know the definition of Vector Space	Vector Space	Quiz 1: 20 questions Quiz 2: 20 questions		
	vector space		UTS: 20 questions		
			UAS: 40 questions		
11	Students are able to know and calculate	Directional Cosines, Scalar Product of Two	Quiz 1: 20 questions		
	the Direction of Cosines, the Scalar	Vectors, Vector Product of Two Vectors	Quiz 2: 20 questions		
	Product of Two Vectors the Vector		UTS: 20 questions		
	Product of Two Vectors		UAS: 40 questions		
	Troduct of Two vectors		1		
12	Students are able to know and calculate	Angle Between Two Vectors, Ratio Of	Quiz 1: 20 questions		
	the angle between two vectors, the ratio of	Directions	Quiz 2: 20 questions		
	directions		UTS: 20 questions		
			UAS: 40 questions		
			Task 1: 10 questions		
13		Quiz 2			
14	Students are able to know the definition	Eigenvalues and Eigenvectors	Quiz 1: 20 questions		
	and how to calculate Eigenvalues and		Quiz 2: 20 questions		
	Eigenvectors		UTS: 20 questions		
	ç		UAS: 40 questions		
15	Students are able to understand and find	- Gower's general formula	Quiz 1: 20 questions		
	solutions from general formula 3 case	Soergel's general formula	Quiz 2: 20 questions		
	studies		UTS: 20 questions		
			UAS: 40 questions		
16	Students are able to understand and find	- The general formula of Canberra	Quiz 1: 20 questions		
	solutions from general formula 4 case		Quiz 2: 20 questions		
	studies		UTS: 20 questions		
			UAS: 40 questions		
			Task 2: 10 questions		
17		UAS			
		TOTAL WEIGHT		100%	





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WHIK NE GE AL AL	INFORMATION	FECHNOLOGY DEPARTM	ENT				
The second secon	() () STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
ASSESSMENT METHOD							
SUBJE	Math 3						
CODE	RTI203006	WEIGHT (credits) / hour	2/4	SEMESTER	1		
SUPPORTING	Deasy Sandhya Elya	a Ikawati					
LECTURER							
ASSESSMENT FORMS							
Task 1							
ASSESSMENT TITLE							
Task 1: 10 questions							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to understand t	he concept of solving	systems of linear equations us	sing the Gauss Seidel , Gau	uss, Gauss Jordan method			
DESCRIPTION							
Answer the assignment question	s provided.						
WORKING METHOD							
Problems are done within 2 hour	rs of lessons						
OUTER FORMAT							
Student assignment answers							
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT					
Conformity of answers	: 100%						
The assessment weight for Assig	nment 1 is 10% of 1	00% of the assessment for this	course				
IMPLEMENTATION SCHED	DULE						
12th week			150 minutes				
OTHERS REQUIRED:							
REFERENCES							
1. Stroud, KA and Dexter J.,	Engineering Mathem	natics, Palgrave Macmillan, 20	13				
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.							





ILK NE GER	MALANG STATE	C POLYTECHNIC	IENT					
Ster Age	STUDY PROCRA	M · D4 INFORMATICS FN	CINFFRINC					
SUBJE SUBJE	Mathematics 2	ASSESSIVENT METHOD						
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2			
SUPPORTING	(Name of Assignme	ent Lecturer)			2			
LECTURER								
ASSESSMENT FORMS	1							
Task 2								
ASSESSMENT TITLE								
Task 2: 10 questions								
SUB COURSE LEARNING A	ACHIEVEMENTS							
Students are able to understand	the concept of solving	g non-linear equations						
DESCRIPTION								
Answer the assignment question	ns provided.							
WORKING METHOD								
Problems are done within 2 hou	irs of lessons							
OUTER FORMAT								
Student assignment answers								
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT						
Conformity of answers	: 100%)						
	(1: 100/ 01							
The assessment weight for Assi	gnment I is 10% of I	00% of the assessment for this	course					
IMPLEMENTATION SCHE	IMPLEMENTATION SCHEDULE							
16th Week			150 minutes					
UTHERS REQUIRED:								
DEFEDENCES								
1 Stroud KA and Devte	r I Engineering Mat	hematics Palarave Macmillan	2013					
2 Munir Rinaldi "Discrete	 Stroud, KA and Dexter J., Engineering Mainematics, Palgrave Macmillan, 2015 Munir, Binaldi, "Discrete Mathematics Ed. 5th Revision". Informatics Bandung, 2012 							





	MALANG STATE	POLYTECHNIC						
ELEVIN A GERIAR	INFORMATION	FECHNOLOGY DEPARTM	IENT					
() () STUDY PROGRAM : D4 INFORMATICS ENGINEERING								
	ASSESSMENT METHOD							
SUBJE	Mathematics 2							
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2			
SUPPORTING	(Name of Assignme	ent Lecturer)						
LECTURER								
ASSESSMENT FORMS								
Quiz 1								
ASSESSMENT TITLE								
Quiz 1: 20 questions								
SUB COURSE LEARNING A	ACHIEVEMENTS							
Students are able to understand	material 1-3							
DESCRIPTION								
Answer the quiz questions prov	ided.							
WORKING METHOD								
Problems are done within 2 hou	irs of lessons							
OUTER FORMAT								
Student quiz answers								
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT						
Conformity of answers	: 100%)						
The assessment weight for Assi	gnment 1 is 7.5% of 1	00% of the assessment for this	s course					
IMPLEMENTATION SCHE	DULE							
4th week			150 minutes					
OTHERS REQUIRED:								
REFERENCES								
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013								
2. Munir, Rinaldi, "Discrete	Mathematics Ed. 5th	Revision", Informatics Bandua	ng, 2012.					





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NE GE	MALANG STATE	Z POLYTECHNIC					
LENNIN CONTRACT	INFORMATION	FECHNOLOGY DEPARTM	IENT				
	() STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
「「開閉」?"	ASSESSMENT METHOD						
SUBJE	Mathematics 2						
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2		
SUPPORTING	(Name of Assignme	ent Lecturer)					
LECTURER							
ASSESSMENT FORMS							
Quiz 2							
ASSESSMENT TITLE							
Quiz 2: 20 questions							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to understand 1	material 8 - 12						
DESCRIPTION							
Answer the quiz questions provi	ded.						
WORKING METHOD							
Problems are done within 2 hour	rs of lessons						
OUTER FORMAT							
Student quiz answers							
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT					
Conformity of answers	: 100%)					
The assessment weight is 7.5% of	of 100% of the assess	ment for this course					
IMPLEMENTATION SCHEDULE							
13th week			150 minutes				
OTHERS REQUIRED:							
REFERENCES							
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013							
2. Munir, Rinaldi, "Discrete I	Mathematics Ed. 5th	Revision", Informatics Bandui	ng, 2012.				





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IK NEGER	MALANG STATI	L POLY IECHNIC				
A CANAN A ST.		IECHNOLOGY DEPARTN	1EN I			
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASS	ESSMENT METHOD			
SUBJE	Mathematics 2					
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	(Name of Assignme	ent Lecturer)				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS: 20 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand	material 1-8					
DESCRIPTION						
Answer the UTS questions prov	rided.					
WORKING METHOD						
Problems are done within 2 hou	rs of lessons					
OUTER FORMAT						
UTS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT				
Conformity of answers	: 100%	0				
The assessment weight is 30% of	of 100% of the assess	ment for this course				
IMPLEMENTATION SCHEDULE						
9th week 150 minutes						
OTHERS REQUIRED:						
REFERENCES						
1. Stroud, KA and Dexter	1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013					
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.						





NUIK NE GERIA	MALANG STATE	C POLYTECHNIC FECHNOLOGY DEPARTM	IENT		
ALL AND A	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING		
		ASS	ESSMENT METHOD		
SUBJE	Mathematics 2				
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2
SUPPORTING	(Name of Assignme	ent Lecturer)			
LECTURER					
ASSESSMENT FORMS					
UAS					
ASSESSMENT TITLE					
UAS: 40 questions					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students are able to understand	the material from me	etings 1-16			
DESCRIPTION					
Answer the assignment question	ns provided.				
WORKING METHOD					
Problems are done within 2 hou	rs of lessons				
OUTER FORMAT					
UAS student answers					
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT			
Conformity of answers	: 100%)			
	21000/ 01	a 1 i			
The assessment weight is 35% of	of 100% of the assessi	ment for this course			
IMPLEMENTATION SCHEDULE					
17th week 150 minutes					
OTHERS REQUIRED:					
KEFERENCES			2012		
1. Stroud, KA and Dexter	r J., Engineering Mat	hematics, Palgrave Macmillan	, 2013		
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.					





Programming Basic Practicum

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	able to explain	Programming language	UTS: 45 questions	Quiz 1: 10 %
	about program concepts, programming		UAS: 2 questions	UTS: 30 %
	languages, compilers, debugging,	Programming language concept	Quiz 1: 2 questions	
	interpreters,	• Java programming language	Quiz 2: 5 questions	
	able to install Java programming tools and	• Compilers and debugging		
	Java basic structure	Java programming tools installation		
2	Students can model case study problems	Case study	UTS: 45 questions	
	using algorithms (describing input,	5	UAS: 2 questions	
	process, output)		Quiz 1: 2 questions	
			Quiz 2: 5 questions	
3	Able to apply data types, variables, input-	Input - output, variable, sequence	UTS: 45 questions	
	output, sequences, and about Operators		UAS: 2 questions	
	(Arithmetic Assignment, Joint		Quiz 1: 2 questions	
	Assignment, Increment, Decrement,		Quiz 2: 5 questions	
	Relational, Logic, Conditional, Bitwise,			
	Casting) in a program code using Java			
4		Quiz 1		
5	• the if, if-else, else-if and switch-case	Election 1	UTS: 45 questions	
	selection forms into the Java		UAS: 2 questions	
	programming language		Quiz 1: 2 questions	
	Able to write into the Java program,		Quiz 2: 5 questions	
	flowcharts that have been made at the			
	theoretical meeting on basic selection cases			
6	Students are able to write into the Java	Election 2	UTS: 45 questions	
	program, the flowchart that has been made		UAS: 2 questions	
	at a theoretical meeting about nested		Quiz 1: 2 questions	
	selection cases		Quiz 2: 5 questions	
7	able to make the format of writing a	Loop 1	UTS: 45 questions	
	looping program part 1 (for, while, do-		UAS: 2 questions	
	while)		Quiz 1: 2 questions	
	Students are able to write Java programs		Quiz 2: 5 questions	
	based on the flowchart that was made at			





	the theoretical meeting on the looping			
	case part 1			
8		UTS		
9	• Be able to explain the format of	Loop 2	UTS: 45 questions	Quiz 2: 10 %
	while, do-while)		Quiz 1: 2 questions	0 1 0 0 0
			Quiz 2: 5 questions	
	Able to write Java programs based on			
	theoretical masting on nested loop asses			
10	• A high to understand the erection of 1	Arroys 1	LITS: 45 questions	
10	• Able to understand the creation of 1-	Allays I	UAS: 2 questions	
	dimensional Arrays		Quiz 1: 2 questions	
	• Able to write implementation of 1		Quiz 2: 5 questions	
	dimensional Array and access its			
	elements in the Java programming			
	A high the implement second in a and sections			
	(enrichment)			
11	Students are able to understand the	Arrays 2	UTS: 45 questions	
11	creation of 2-dimensional Arrays	Allays 2	UAS: 2 questions	
	Able to write implementation of 1		Ouiz 1: 2 questions	
	dimensional Array and access its elements		Ouiz 2: 5 questions	
	in the Java programming language.			
	Case study enrichment can be used matrix			
	operations			
12	able to implement functions (function data	Function 1	UTS: 45 questions	
	types, function parameters/arguments,		UAS: 2 questions	
	returns) and function calls in Java		Quiz 1: 2 questions	
			Quiz 2: 5 questions	
13		Quiz 2		
14	able to implement recursive functions and	Function 2	UTS: 45 questions	
	enrichment of function cases	(Recursive Function)	UAS: 2 questions	
			Quiz 1: 2 questions	
1.5			Quiz 2: 5 questions	
15	Able to create programs to solve problems	Meeting materials 1-14	U1S: 45 questions	
			Ouiz 1: 2 questions	
			Quiz 1: 2 questions	
			Quiz 2. 5 questions	





16	Able to create programs to solve problems	Meeting materials 1-14	UTS: 45 questions UAS: 2 questions Quiz 1: 2 questions Quiz 2: 5 questions	
17	UAS			
	100%			





A NE GE	MALANG STATE	POLYTECHNIC					
Statement and and and	INFORMATION T	TECHNOLOGY DEPARTM	1ENT				
	() TUDY PROGRAM : D4 INFORMATICS ENGINEERING						
		ASS	ESSMENT METHOD				
SUBJE	Programming Basic	Practicum					
CODE	RTI211007	WEIGHT (credits) / hour	3/6	SEMESTER	1		
SUPPORTING	Vivi Nur Wijayanin	grum, S. Kom, M. Kom					
LECTURER							
ASSESSMENT FORMS							
Quiz I							
ASSESSMENT TITLE							
Quiz 1 does 2 questions	CHIEVEMENTS						
SUB COURSE LEAKINING A	CHIEVENIEN 15						
Understand material 1-5							
DESCRIPTION							
WORKING METHOD							
Working within 4 X 50 "							
WORKING WITHIN 4 A 50							
Student answer							
INDICATORS CRITERIA A	ND WEIGHT ASSE	SCMENT					
Conformity of answers	• 100%						
Comorning of answers	. 10070						
The assessment weight is 10% c	of 100% of the assessr	nent for this course					
IMPLEMENTATION SCHE	DULE						
4th week			4 X 50 "				
OTHERS REQUIRED:							
REFERENCES							
1. Sebesta, Robert, 2016. Con	scept of programming	languages global edition, Ade	dison Wesley, Publ.				
2. Sestoft, Peter, 2017. Progra	amming Language Co	ncepts, Springer, Publ.					
3. T. Henny Febriana Harumy, 2	3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						





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ENNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRA	M : D4 INFORMATICS EN	IGINEERING			
		ASS	ESSMENT METHOD			
SUBJE	Programming Basic	Practicum			-	
CODE	RTI211007	WEIGHT (credits) / hour	3/6	SEMESTER	1	
SUPPORTING	Vivi Nur Wijayanin	grum, S. Kom, M. Kom				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS does 45 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand Jobsheets 1-8						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	LSSMENT				
Conformity of answers	: 100%	1				
	21220/ 01					
The assessment weight is 30% of	of 100% of the assessr	nent for this course				
IMPLEMENTATION SCHE	DULE		4 74 70 11			
9th week			4 X 50 "			
OTHERS REQUIRED:						
DEEDBENGE						
REFERENCES	<u> </u>		** ••••••••			
1. Sebesta, Robert, 2016. Con	icept of programming	languages global edition, Add	dison Wesley, Publ.			
2. Sestoff, Peter, 2017. Progra	imming Language Co	ncepts, Springer, Publ.				
3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						





TANIK NE GERI AN	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM • D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD						
SUBJE	Programming Basic	Practicum				
CODE	RTI211007	WEIGHT (credits) / hour	3/6	SEMESTER	1	
SUPPORTING	Vivi Nur Wijayanin	grum, S. Kom, M. Kom				
LECTURER	5.2					
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS did 2 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand material 1-16						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 30% o	f 100% of the assessr	nent for this course				
IMPLEMENTATION SCHEI	DULE					
17th week			4 X 50 "			
OTHERS REQUIRED:						
REFERENCES						
1. Sebesta, Robert, 2016. Con	cept of programming	languages global edition, Add	ison Wesley, Publ.			
2. Sestoft, Peter, 2017. Progra	mming Language Co	ncepts, Springer, Publ.				
3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						





Basic Programming

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are familiar with the basic	Programming Basic Concepts	Quiz 1: 40 questions	Quiz 1: 10 %
	and able to analyze simple problems in the	· Logic-based problem analysis	UIS: 45 questions	013.30 %
	form of algorithms [C2_A3]		OAS. 5 questions	
2	Students are familiar with the basic	Programming Basic Concepts	Ouiz 1: 40 questions	-
2	concepts of algorithms	· Logic-based problem analysis	UTS: 45 questions	
	and able to analyze simple problems in the	· Logic-based problem analysis	UAS: 5 questions	
	form of algorithms [C2, A3]			
3	Students understand and are able to	· Data Type	Ouiz 1: 40 questions	
-	explain	· Variable	UTS: 45 questions	
	about Data Type, Variable, Input-	· Input-Output	UAS: 5 questions	
	output, Sequence, Operator	Sequences	1	
	(Assignment	• Operator		
	Arithmetic, Assignments	(Assignment		
	Mergers, Increments,	Arithmetic.		
	Decrement, Relational,	Assignment		
	Logic, Conditional,	combined,		
	Bitwise, Casting) and	Increments,		
	able to apply it in writing algorithms [C4,	Decrement,		
	A3]	relational,		
		Logic,		
		conditional,		
		Bitwise and		
		casting		
4		Quiz 1		
5	Student is able	Selection 1 (if,	Quiz 1: 40 questions	
	explain about	ifelse, ifelse	UTS: 45 questions	
	election concept	if, switchcase) Logical expression	UAS: 5 questions	
	simple and nested, and able to write	Election		
	selection algorithms to solve case	nest		
	flow chart [C4 A2 D2]			
6	Student is shie	Salastian 1 (if	Ouiz 1: 40 questions	_
0	Student IS able	Selection I (II,	UIZ 1: 40 questions	
	explain about	IIeise, IIeise	015.45 questions	





		· C · · · · · · · · · · · · · · · · · ·			
	election concept	11, switchcase) Logical expression	UAS: 5 questions		
	simple and nested, and able to write	Election			
	selection algorithms to solve case	nest			
	studies using				
	tlow chart [C4, A3,P2]	-		4	
7	Student is able	• Draft	Quiz 1: 40 questions		
	understand the algorithm	loop	UTS: 45 questions		
	simple loops and nested loops, and	· loop	UAS: 5 questions		
	able to describe case study problems	Nesting			
	using				
	d = 1 + [C4 + 2 - D2]				
0	flow chart [C4, A3, P2]	LITE		4	
8					
9	Student is able	· Draft	Quiz 1: 40 questions	Quiz 2: 10 %	
	understand the algorithm	loop	U1S: 45 questions	U A S: 30 %	
	simple loops and nested loops, and	· loop	UAS: 5 questions		
	able to describe case study problems	Nesting			
	using				
	flow chart [C4 A3 P2]				
10	Student is able	· Arrays concept	Quiz 1: 40 questions		
	understand the concept of 1	· Arrays 1	UTS: 45 questions		
	dimensional and 2 dimensional arrays	Dimensions	UAS: 5 questions		
	as well as canable	· Arrays 2			
	complete a case study using 1-	Dimensions			
	dimensional and 2-dimensional arrays				
11	Student is able	· Arrays concept	Ouiz 1: 40 questions		
	understand the concept of 1	· Arrays 1	UTS: 45 questions		
	dimensional and 2 dimensional arrays	Dimensions	UAS: 5 questions		
	as well as capable	· Arrays 2	1		
	complete a case study using 1-	Dimensions			
	dimensional and 2-dimensional arrays				
12	Student is able	Function Concept · Iterative Function ·	Ouiz 1: 40 questions	1	
	explain the concept of iterative and	Recursive Function	UTS: 45 questions		
	recursive functions,		UAS: 5 questions		
	create/declare function. function call as		1		
	well as able				
	apply it in				
	develop algorithms				





	problem solving [C4,		
13		Quiz 2	
14	Student is able	\cdot Function Concept \cdot Iterative Function \cdot	Quiz 1: 40 questions
	explain the concept of iterative and	Recursive Function	UTS: 45 questions
	recursive functions,		UAS: 5 questions
	create/declare function, function call as		
	well as able		
	apply it in		
	develop algorithms		
	problem solving [C4,		
15	Students can understand and make Object	- Definition of Object & Class	Quiz 1: 40 questions
	Oriented Analysis & Design	- Defining Classes	UTS: 45 questions
		- Relations in Object	UAS: 5 questions
16		inheritance	
16	- Students can test software with the	- Definition of software testing	Quiz 1: 40 questions
	Whitebox & Blackbox model	- White box testing	UIS: 45 questions
	Students can perform software testing in	- Blackbox testing	UAS: 5 questions
	terms of integration, validation and system	- Integration testing	
1.5	testing	validation	
17			
		TOTAL WEIGHT	





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ENNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
The second secon	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASS	ESSMENT METHOD			
SUBJE	Basic Programmin	ig				
CODE	RTI171009	WEIGHT (credits) / hour	2/4	SEMESTER	1	
SUPPORTING	Vivi Nur Wijayanin	grum, S. Kom, M. Kom				
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 1 does 40 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand material 1-3						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	LSSMENT				
Conformity of answers	: 100%)				
	2					
The assessment weight is 10% c	of 100% of the assessr	nent for this course				
IMPLEMENTATION SCHE	DULE		4 74 50 11			
4th week			4 X 50 "			
OTHERS REQUIRED:						
REFERENCES			·····			
1. Sebesta, Robert, 2016. Cor	icept of programming	, languages global edition, Add	dison Wesley, Publ.			
2. Sestoft, Peter, 2017. Progra	amming Language Co	ncepts, Springer, Publ.				
3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						





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(i) (in	STUDY PROGR	AM : D4 INFORMATICS EN	GINEERING			
ASSESSMENT METHOD						
SUBJE	Basic Programm	ing				
CODE	RTI171009	RTI171009	RTI171009	RTI171009	RTI171009	
SUPPORTING	Vivi Nur Wijayan	ingrum, S. Kom, M. Kom				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS does 50 questions						
SUB COURSE LEARNING A	ACHIEVEMENTS					
Understand Jobsheets 1-8						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	AND WEIGHT ASS	SESSMENT				
Conformity of answers	: 100	%				
	61000/ 64					
The assessment weight is 30%	of 100% of the asses	sment for this course				
IMPLEMENTATION SCHE	DULE		4 37 50 12			
9th week			4 X 50 "			
OTHERS REQUIRED:						
DEEDENCES						
REFERENCES			1' XX 1 D 1 1			
1. Sebesta, Robert, 2016. Co	ncept of programmir	ig languages global edition, Add	dison Wesley, Publ.			
2. Sestoft, Peter, 2017. Progr	amming Language (concepts, Springer, Publ.	·			
3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						





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Stern Age	INFURMATION .	I ECHNOLOGY DEPARTM M • D4 INFODMATICS FN4	EN I CINEEDINC			
	STUDITKUGNA	ASSE	SSMENT METHOD			
SUBJE Basic Programming						
CODE	RTI171009	RTI171009	RTI171009	RTI171009	RTI171009	
SUPPORTING	Vivi Nur Wijayanin	grum, S. Kom, M. Kom				
LECTURER	5.5					
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS did 35 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understanding Jobsheets 1-16						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	CSSMENT				
Conformity of answers	: 100%					
The assessment weight is 30% o	f 100% of the assess	nent for this course				
IMPLEMENTATION SCHEE	DULE					
17th week 4 X 50 "						
OTHERS REQUIRED:						
REFERENCES	REFERENCES					
1. Sebesta, Robert, 2016. Con	cept of programming	languages global edition, Add	ison Wesley, Publ.			
2. Sestoft, Peter, 2017. Progra	mming Language Co	ncepts, Springer, Publ.				
3. T. Henny Febriana Harumy, 2016. Learning Basic Algorithms and C++ Programming, Deepublish.						

Project 2





Week	Sub-CP-MK	Subject	Assessment form	Weight
1	 Students understand the goals, processes and outputs and outcomes of Project 2 courses Students understand the duties and functions of the Project implementer Students understand <i>collaboration tools</i> that can be used to manage projects and work collaboratively remotely / online. 	Introduction: - Project course description - Lecture Contract - output Project Implementer Review: - Stakeholders - Project Manager - System Analyst - System Designer - Programmer - Tester Review <i>Collaboration Tools:</i> - GitHub - Google Docs - LucidChart Eigense	Group discussion on the OT project concept	Quiz 1: 20% UTS: 30%
2	 Students understand the stages of project management Students can make project plans 	 Identify and determine the scope or scope that needs to be carried out in the project development process Collect information needed in the software development process from stakeholders 	Group discussions regarding the stages of project management	
3	 Students understand the stages of project management Students can make project plans 	- Planning the team structure, time frame, budget, security, and various other important factors needed for software development	Group discussions related to making project plans	





4	• Students understand and can analyze the functional requirements of the system.	- Analyze the functional requirements of the system	Group discussion related to software specification documents		
5		Quiz 1			
6	Students understand and can make design plans or design specifications.	 Design specifications: Architecture: programming language to be used, overall software design, and others. UserInterface 	Group discussion related to software architecture		
7	• Students understand and can make design plans or design specifications.	Design specifications: • platforms • security	Group discussion related to design		
8		UTS			
9	• Students can collaborate in system development	System Implementation:-Programming-System Integration-debugging-Documentation	System implementation progress reporting	Quiz 2: 20% UAS: 30%	
10	• Students can collaborate in system development	System Implementation:-Programming-System Integration-debugging-Documentation	System implementation progress reporting		





11	• Students can collaborate in system development	System Implementation:-Programming-System Integration-debugging-Documentation	System implementation progress reporting	
12	• Students can collaborate in system development	System Implementation:-Programming-System Integration-debugging-Documentation	System implementation progress reporting	
13		Quiz 2		
14	• Students can evaluate the system that has been built.	Quality Assurance: – testing	Group discussion related to testing	
15	• Students understand and can make process and product documentation.	Documentation – Process Documentation – Product Documentation	Group discussion related to documentation	
16	• Students can communicate for outreach to system users.	Delivery: – Training for Users	Group discussions related to technical documentation and training for users	





17	UAS		
	TOTAL WEIGHT	100%	





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		ASS	ESSMENT METHOD			
SUBJECT	Project 2					
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	5	
SUPPORTING LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Proposal pitching desk						
SUB COURSE LEARNING A	CHIEVEMENTS					
 Students understand the objectives, processes, outputs, outcomes of Project 2 courses Students can make project plans related to scope Students can make project plans related to organizational structure, time frame, budget, security etc Students understand and can analyze the functional requirements of the system. 						
Communicating project plans th	at have been prepare	d.				
WORKING METHOD						
 The questions are done through e-learning lms.polinema.ac.id Presenting the drafted project plans 						
OUTER FORMAT						
 Job Object: Quiz Output Form: Presentation of the project proposal 						
IMPLEMENTATION SCHEI	IMPLEMENTATION SCHEDULE					
5th week			15 minutes			
OTHERS REQUIRED:						





REFERENCES

- Shit, Daniel. 2012. Needs Analysis in Software Engineering. Yogyakarta: Andi.
- Heryanto, Priest., Triwibowo, Totok. 2013. Information Technology-Based Project Management. Bandung: Informatics.
- Tantara, Rudy. 2012. Information System Project Management. Yogyakarta: Andi.







MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

ASSESSMENT METHOD

SUBJECT	Project 2					
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	5	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
System implementation progress	s report					
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can collaborat	te in system developm	nent				
DESCRIPTION						
Communicate the progress of sy	stem implementation	l				
WORKING METHOD						
• The questions are done	through e-learning li	ms.polinema.ac.id				
• Presenting the progress	s of system implemen	itation				
OUTER FORMAT						
Job Object: Quiz						
Output Form: Presentat	tion of the project pro	oposal				
IMPLEMENTATION SCHEDULE						
13th week			15 minutes			
OTHERS REQUIRED:						
REFERENCES						





- Shit, Daniel. 2012. Needs Analysis in Software Engineering. Yogyakarta: Andi.
- Heryanto, Priest., Triwibowo, Totok. 2013. Information Technology-Based Project Management. Bandung: Informatics.
- Tantara, Rudy. 2012. Information System Project Management. Yogyakarta: Andi.

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		ASSI	ESSMENT METHOD		
SUBJECT	Project 2				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	5





SUPPORTING						
JECTURER						
MIDTERM EXAM	AIDTERM EXAM					
ASSESSMENT TITLE						
Software planning						
SUB COURSE LEARNING ACHIEVEMENTS						
• Students understand the objectives, processes, outputs, outcomes of Project 2 cours	es					
 Students can make project plans related to scope 						
• Students can make project plans related to organizational structure, time frame, but	get, security etc					
• Students understand and can analyze the functional requirements of the system.						
• Students understand and can make system design plans						
Students understand and can make system architecture plans						
DESCRIPTION						
Communicate the plans drawn up						
WORKING METHOD						
• The questions are done through e-learning lms.polinema.ac.id						
Presenting plans related to system design and architecture						
OUTER FORMAT						
• Job Object: Quiz						
• Output Form: Presentation of software requirements specification documentation						
IMPLEMENTATION SCHEDULE						
8th week	15 minutes					
OTHERS REQUIRED:						
officks keyenkeb.						
REFERENCES						
Shit Daniel 2012 Needs Analysis in Software Engineering Versultantes Andi						
 Sind, Daniel. 2012. Needs Analysis in Soliware Engineering. Togyakana. Anul. Hervanto, Priest, Triwibowo, Totok 2013. Information Technology Based Project Management, Bandung, Informatics. 						
 Hervanio, Friest., Hiwibowo, Tolok. 2015. Information Technology-Dased Froject Tantara Budy 2012. Information System Disject Management. Vegyakarta: Andi 	Management. Dandung. mormatics.					
• Tantara, Rudy. 2012. Information System Project Management. Pogyakarta: Andi.						





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		ASSESSMENT METHO)D		
SUBJECT	Project 2				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	5
SUPPORTING LECTURER			•		
ASSESSMENT FORMS					
FINAL EXAMS					
ASSESSMENT TITLE					
Project Evaluation					
SUB COURSE LEARNING ACHIEVEMEN	TS				
• Students understand the objectives, pro	cesses, outputs	, outcomes of Project 2 courses			
• Students can make project plans related	to scope				
• Students can make project plans related	l to organizatio	nal structure, time frame, budget, security	v etc		
• Students understand and can analyze th	e functional rec	quirements of the system.			
• Students understand and can make syste	em design plan	S			
 Students understand and can make system Students can collaborate in system down 	em architecture	e plans			
 Students can evaluate the system that h 	as been built				
 Students can evaluate the system that if Students understand making process an 	d product docu	mentation			
 Students and communicate for outreach 	to system user	'S			
DESCRIPTION					
Communicate overall project evaluation					
WORKING METHOD					
The questions are done through e-learning lms.polinema.ac.id					
Presenting overall project results and ev	valuation				
OUTER FORMAT					




15 minutes

- Job Object: Quiz ٠
- Output Form: Presentation of project results and reports ٠

IMPLEMENTATION SCHEDULE

17th week

OTHERS REQUIRED:

REFERENCES

- Shit, Daniel. 2012. Needs Analysis in Software Engineering. Yogyakarta: Andi. •
- Heryanto, Priest., Triwibowo, Totok. 2013. Information Technology-Based Project Management. Bandung: Informatics. Tantara, Rudy. 2012. Information System Project Management. Yogyakarta: Andi. ٠
- ٠





IT Project Management

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students can understand the concept of project management in general and can understand the life cycle of a project	 Project management IS project life cycle Project relationship with the organization Profession in project management 	 Results of group discussions Case analysis in software projects Quiz 1 (5 questions) UTS (2 questions) UAS (2 questions) 	Task 1: 5% Task 2: 5% Group discussion : 8% Quiz 1: 12% UTS: 20%
2	• Students can understand the roles and functions of each personnel associated with the PL Project	 Understanding the organizational structure of the project Project implementers The roles and functions of personnel in the project 	 Discuss the roles and functions of personnel in an PL project and form a small organization in a group according to the PL project activities Quiz 1 (5 questions) UTS (3 questions) UAS (3 questions) 	
3	Students can prepare software project proposals (SCRUM)	 Definition of business cases Project proposal templates Terms of reference 	 Task 1 : Design a software project proposal that defines what will be done, business needs, TOR, expected results etc. (proposal template will be provided) Quiz 1 (5 questions) UTS (3 questions) UAS (3 questions) 	
4				
5	• Students are able to plan a project management	 Basic project management plan Develop an integrated project management plan Create a project management plan template 	 Discussion: Develop a project management plan, the contents of the project management plan UTS (2 questions) UAS (2 questions) 	





6	• Students are able to plan PL project scope management	 Project scope basics Process of Gathering Requirements The process of defining scope n The process of compiling a work breakdown structure and dictionary Using Microsoft Project to create a Work Breakdown Structure 	 Arranging project scope by using microsoft project to define process scope UTS (3 questions) UAS (3 questions) 	
7	Students are able to plan PL project time management	 Project time management plan The process defines project activities Process sequencing activities The process of estimating project resource requirements The process determines the duration of the activity The process of compiling a project activity schedule with Ms. Project 	 Task 2: Arrange time management in PL/duration projects using Microsoft Project UTS (3 questions) UAS (3 questions) 	
8		UTS		
9	Students are able to plan cost management in PL projects	 Project cost management plan The process of estimating activity costs The process of preparing a project budget Compile a project budget with Ms.Excel (template) Develop project budget with Ms. software . Project 	 Discussion: Arranging budget management in PL/duration projects using Microsoft Project Quiz 2 (3 questions) UAS (3 questions) 	Task 1: 5% Task 2: 5% Discussion : 10% Quiz 2: 10% UAS: 20%
10	• Students are able to plan HR management in PL projects	 Project HR management Project HR management plan The process of planning project HR Develop a project HR management plan using the template provided 	 Discussion: Arranging HR management in PL/duration projects using microsoft project (1x50') Quiz 2 (3 questions) UAS (4 questions) 	
11	• Quiz 2			





12	• Students are able to plan cost management in PL projects	 Project cost management plan The process of estimating activity costs The process of preparing a project budget Develop project budget with Ms. software . Project t 	 Task 3: Arrange communication management in the PL/duration project using the prepared template UAS (3 questions)
13	• Students are able to plan HR management in PL projects	 Project HR management Project HR management plan The process of planning project HR Develop a project HR management plan using the template provided 	 Discussion: Setting up risk management in PL/duration projects using the prepared templates UAS (3 questions)
14	• Students are able to plan communication management in PL projects	 Project communication management planning Workshop on making a project communication management plan 	 Discussion: Make a report on the results of monitoring time and costs in PL projects UAS (3 questions)
15	• Students are able to plan risk management in PL projects	 Risk management plan The process of identifying risks The process of conducting a qualitative risk analysis The process of conducting a quantitative risk analysis The process of determining responses to risk Compile project register Workshop on preparing a project risk management plan 	 Discussion: Making reports on the results of HR monitoring and communication in PL projects UAS (3 questions)
16	• Students are able to monitor and control time and costs in PL projects	 The concept of supervising the implementation of the project schedule and budget of the PL project Techniques for controlling schedules and costs (PV curves, EV, schedule performance index, crashing) Using MS project to control schedule and cost in PL project 	 Task 4: Prepare the final PL project report along with the attachments to the PL project report UAS (3 questions)
17		UAS	





TOTAL WEIGHT 100%





CONTRACTOR OF CO	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASS	ESSMENT METHOD			
SUBJECT	Project managemen	t				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz material 1-3						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can understand the con-	cept of project manag	gement				
Students can understand the role	s and functions of pe	ersonnel				
Students can compile software p	roposals					
DESCRIPTION						
Students can understand the con-	cept of project manag	gement				
Students can understand the role	s and functions of pe	ersonnel				
Students can compile software p	roposals					
DESCRIPTION			· 1. 1. 1. /			
1. Answer Quiz questions related to project management concepts, personnel functions and PL proposals / case study presentations						
WORKING METHOD						
The questions are done through e-learning lms.polinema.ac.id						
• Quiz done in 35 minutes						
OUTER FORMAT						
 Job Object: Quiz 						
• Output Form: Student (Output Form: Student Quiz answers / Case study presentation					
IMPLEMENTATION SCHEDULE						





4th week	35 minutes
OTHERS REQUIRED:	
REFERENCES	
Murali Chemuturi, Thomas M. Cagley, 2010, Mas	g Software Project Management: Best Practices .
Kathy Schwalbe, 2009, Information Technology P	t Management, 6th Edition, Course Technology





Contraction of the second seco	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
	ASSESSMENT METHOD						
SUBJECT	Project management						
CODE	RTI WEIGHT (credits) / hour 3 credits / 6 hours SEMESTER 4						
SUPPORTING LECTURER							
ASSESSMENT FORMS							
Quiz 2							
ASSESSMENT TITLE							
Quiz material 9-10							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students can understand and pla Students can understand and pla	n cost management in PL projects n HR management in PL projects						
DESCRIPTION							
Answering Quiz questions relate	d to project management concepts in the form of costs and HR/ Presentation						
WORKING METHOD							
• The questions are done	through e-learning lms.polinema.ac.id						
• Quiz done in 35 minute	S						
• If the presentation is he	If the presentation is held for 15 minutes						
OUTER FORMAT							
A. JOD UDJECI: QUIZ B. Output Form: student Ouiz answers/ presentations							
D. Output Form. student Quiz answers/ presentations							
Conformity of answers	· 100%						
contenting of unswers							
Quiz 1 assessment weight is 12%	% of 100% assessment of this course						
IMPLEMENTATION SCHEI	DULE						





11th week		35 minutes
OTHERS RE	QUIRED:	
DEFEDENCI	P.0	
REFERENCI	£S	
Mura	li Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Manage	ment: Best Practices .
Kathy	y Schwalbe, 2009, Information Technology Project Management, 6th Edition	, Course Technology





CONTRACTOR OF THE STREET	MALANG STATI INFORMATION STUDY PROGRA	E POLYTECHNIC TECHNOLOGY DEPARTM M : D4 INFORMATICS EN ASS	IENT IGINEERING ESSMENT METHOD			
SUBJECT	Project managemer	nt				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Midterm exam						
ASSESSMENT TITLE						
UTS material 1-7						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can understand the con	cept of project mana	gement				
Students can understand the role	es and functions of pe	ersonnel				
Students can compile software p	oroposals					
Students are able to plan a proje	ct management	ant				
Students are able to plan PL pro	ject scope manageme	ent				
DESCRIPTION	jeet time managemen	11				
Answer LITS questions related to	o the concept of proj	ect management				
WORKING METHOD	o the concept of proj	eet management				
 The questions are done through e-learning lms.polinema.ac.id UTS is done in 60 minutes 						
OUTER FORMAT						
Work Object: UTS	Work Object: UTS					
• Outcome Form: UTS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT				
Conformity of answers	: 100%	0				
The UTS assessment weight is 2	20% of 100% of the a	assessment for this course				





IMPLEMENTATION SCHEDULE					
8th week	60 minutes				
OTHERS REQUIRED:					
REFERENCES					
Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Manager	ient: Best Practices .				
• Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition,	Course Technology				





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5-64. 42	INFORMATION .	I ECHNOLOGY DEPAR I M M - DA INFODMATICS FN	EN I CINFEDINC				
	STUDY PROGRA	M : D4 INFORMATICS ENO	GINEERING				
		ASSE	ESSMENT METHOD				
SUBJECT	Project managemen	t					
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4		
SUPPORTING							
LECTURER							
ASSESSMENT FORMS							
Final exams							
ASSESSMENT TITLE							
UAS material 1-7							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to plan cost ma	nagement in PL proj	ects					
Students are able to plan HR ma	nagement in PL proje	ects					
Students are able to plan cost ma	inagement in PL proj	ects					
Students are able to plan HR ma	nagement in PL proje	ects					
Students are able to plan commu	nication managemen	t in PL projects					
Students are able to plan risk ma	nagement in PL proj	ects					
DESCRIPTION	control time and cos	is in PL projects					
Answer UAS questions related t	a the concept of proje	at managamant					
Answer UAS questions related to the concept of project management							
• I ne questions are done through e-learning ims.polinema.ac.id							
	U1S is done in 35 minutes						
West Object UAS							
Work Object: UAS							
Outcome Form: student	UAS answers	SCMENT					
INDICATORS, URITERIA AND WEIGHT ASSESSMENT							





Conformity of answers

: 100%

The UTS assessment weight is 20% of 100% of the assessment for this course

IMPLEMENTATION SCHEDULE

8th week

OTHERS REQUIRED:

35 minutes

REFERENCES

- Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices .
- Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology





Career development

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	 Get to know the goals, processes and outputs and outcomes of the course Able to explain the importance of Personal Branding and how to apply it to themselves according to their potential and needs 	 Definition of Personal Branding How to apply to themselves as needed 	• Task 1: Written assignment	Task 1: 3% Task 2: 2% Task 3: 3% Task 4: 2% Task 5: 2%
2	Able to explain the various professions in the field of informatics and able to choose the most suitable for himself	 Variety of informatics professions IT Profession Standardization IT professional level 	• Task 2: written assignment	Task 6: 3% Task 7: 3% UTS: 30%
3	 Understand the rules of career development in organizations Able to find problems and formulate solutions of career development for himself in accordance with organizational rules 	 Career development rules in organizations Various choices of informatics professions that are appropriate and in line with organizational rules 	Task 3: written assignmentUTS (1 question)	
4	Able to find problems and formulate solutions for career development for himself as a freelancer according to his potential and competence	 Variety of freelance professions Terms and provisions to become a freelancer 	• Task 4: written assignment	
5	Understand the basic concepts of career management (career exploration, career goals, career strategies, career assessment)	 Career exploration Career goal Career Strategy Career Assessment 	Task 5: written assignmentUTS (1 question)	
6	 Understand career paths/patterns Understand the elements of career management Understand the benefits of career management Understand the phases of career management Understand career anchors according to personality 	 Career path/pattern Elements of career management Career management benefits Career management phase Personal career anchor 	 Task 6: written assignment UTS (1 question) 	





7	 Understand career paths/patterns Understand the elements of career management Understand the benefits of career management Understand the phases of career management Understand career anchors according to personality 	 Public speaking method The basics of public speaking The benefits of public speaking 	• Task 7: written assignment	
8		UTS		
9	 Understand the basic concept of performance appraisal Understand the purpose and benefits of performance appraisal Understand the elements of performance appraisal Understand performance appraisal standards Understand performance appraisal methods and guidelines 	 The basic concept of performance appraisal Purpose and benefits of performance appraisal Elements of performance appraisal Performance appraisal standards Performance appraisal methods and guidelines 	 Task 8: written assignment UAS (1 question) 	Task 8: 2% Duty 9: 3% Task 10: 2% Task 11: 2% Task 12: 2% Task 13: 2% Task 14: 2% Task 14: 2% UAS: 35%
10	 Understand the basic concept of compensation Understand the compensation process Understand compensation theory Understand compensation goals Understand the compensation system Understand the principle of fairness in compensation 	 The basic concept of compensation Compensation process Compensation theory Compensation goals Compensation system The principle of fairness in compensation 	• Assignment 9: written assignment	
11	 Understand the basic theory of Holland's concept Understanding the characteristics of Holland's theory Understand the strengths and weaknesses of Holland's theory. 	 John Holland's career selection theory (RIASEC) The characteristics of Holland's theory The strengths and weaknesses of John Holland's theory Research research on John Holland's theory 	 Assignment 10: written assignment UAS (1 question) 	





		• The application of John Holland's theory to the application of career counseling guidance	
12	 Understand the meaning of Career Maturity Understanding indicators in Career Maturity Understand efforts to increase Career Maturity Understand the factors that influence Career Maturity. 	 Definition of Career Maturity indicators in Career Maturity Efforts to increase career maturity Factors that influence Career Maturity 	 Assignment 11: written assignment UAS (1 question)
13	 Understand the basic concept of protean career Knowing the characteristics of protean careers Know the concept of career planning Knowing how to build a career development system 	 Protean career basic concept Characteristics of protean careers Career planning concept How to build a career development system 	• Assignment 12: written assignment
14	 Understand the history of the industrial revolution Knowing the changes in the industrial era 4.0 Knowing career prospects in the industrial era 4.0 Knowing the non-technical skills that must be possessed in the industrial era 4.0 	 History of the industrial revolution Changes in the industrial era 4.0 Career prospects in the industrial era 4.0 Non-technical skills that must be possessed in the industrial era 4.0 	• Assignment 13: written assignment
15	 Understand the internationalization of business Understand international business HR challenges Understand the differences in HRM between countries Understand staffing of global organizations Understand international assignment factors 	 Internationalization of business International Business HR Challenges Differences in HRM between countries Global Organization Staffing International assignment factor 	 Assignment 14: written assignment UAS (1 question)





16	Understand differences and similarities in HR practices between countries and influencing factors including culture, economic systems, law, and international relations	 Differences and similarities in HR practices between countries cultural factors Economic system factor Legal factors and industrial relations 	• Assignment assignment	15:	written		
17							
TOTAL WEIGHT						100%	





WIK NEGERI	MALANG STATE POLYTECHNIC						
Ster the	INFORMATION TECHNOLOGY DEPAI	RTMENT					
	STUDY PROGRAM: D4 INFORMATICS	ENGINEERING					
	ASSESSMENT METHOD						
SUBJ	Career development		0 1: / / 1	CEMECTED			
CODE	Atiaah Nami Ami S DJ M DJ	wEIGH1 (credits) / hour	2 credits / 4 hours	SEMESTER 8			
LECTURER	Auqui Nurui Asri, S.Pd., M.Pd.						
LECTURER	Deddy Kusbianio PA, Ir., M.MKOM.						
	Qonitatul Hasanan, S.S1, M. Ir. I						
	Kizdania SI., MKom.						
	Vit Zuraida, S.Kom., M.Kom.						
	Adevian Fairuz Pratama, S.S.I, M.Eng						
ASSESSMENT FODMS	Diana Mayangsari Ramadhani, S.S1, M.Ir.I						
ASSESSMENT FORMS							
ASSESSMENT TITLE							
UTS							
SUB COURSE LEARNIN	G ACHIEVEMENTS						
Get to know the goals, proce	esses and outputs and outcomes of the course						
Able to explain the importan	nce of Personal Branding and how to apply it to	themselves according to their potential and	needs				
Able to explain the various p	professions in the field of informatics and able t	to choose the most suitable for himself					
Understand the rules of care	eer development in organizations						
Able to find problems and for	ormulate solutions of career development for hi	mself in accordance with organizational rule	es				
Able to find problems and for	ormulate solutions for career development for h	imself as a freelancer according to his poten	tial and competence				
Understand the basic concep	pts of career management (career exploration, ca	areer goals, career strategies, career assessm	ent)				
Understand career paths/path	terns						
Understand the elements of	career management						
Understand the benefits of c	career management						
Understand the phases of ca	Understand the phases of career management						
Understand career anchors according to personality							
Understand the method of p	Understand the method of public speaking						
Know the basics of public sp	peaking						
Understand the benefits of p	public speaking in a career						
DESCRIPTION							
Answer questions from wee	k 1-7 material						
WORKING METHOD							





The questions are done through e-learning lmsslc .polinema.ac.id	
OUTER FORMAT	
Work Object: UTS	
Outer Form: student answers	
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers: 10 0 %	
The UTS assessment weight is 30% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
8th week	120 minutes
OTHERS REQUIRED:	
REFERENCES	
Widyanti, R. (2021). Career Management (Theory, Concept and Practice). Indonesian Science Media.	
Sinambela, LP (2021). Human Resource Management: Building a solid work team to improve performance. Script Earth.	





	MALANG STATE POLYTI	MALANG STATE POLYTECHNIC						
ALANIK NEGER, 47	INFORMATION TECHNO	LOGY DEPARTMENT						
	STUDY PROGRAM: D4 IN	FORMATICS ENGINEERING						
ASSESSMENT METHOD								
	Career development	eer development						
	R11198003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 8				
SUPPORTING LECTURER	Atiqah Nurul Asri, S.Pd., M.P	² d.						
	Deddy Kusbianto PA, Ir., M.N.	vikom.						
	Qonitatul Hasanah, S.ST, M.T	r.1						
	Rizdania ST., MKom.							
	Vit Zuraida, S.Kom., M.Kom.							
	Adevian Fairuz Pratama, S.ST	ſ, M.Eng						
	Diana Mayangsari Ramadhani	i, S.ST, M.Tr.T						
ASSESSMENT FORMS								
ASSESSMENT TITLE								
SUB COURSE LEARNING ACHIEV	TMENTS							
Understand the basic concept of perform	ance appraisal							
Understand the purpose and benefits of t	performance appraisal							
Understand the elements of performance	appraisal							
Understand performance appraisal stand	ards							
Understand performance appraisal method	ods and guidelines							
Understand the basic concept of compen	sation							
Understand the compensation process								
Understand compensation theory								
Understand compensation goals								
Understand the compensation system								
Understand the principle of fairness in compensation								
Understand the basic theory of Holland's concept								
Understanding the characteristics of Hol	land's theory							
Understand the strengths and weaknesse	Understand the strengths and weaknesses of Holland's theory.							
Understand the meaning of Career Matu	rity							
Understanding indicators in Career Matu	ırity							
Understand efforts to increase Career Ma	aturity							





Understand the factors that influence Career Maturity.	
Understand the basic concept of protean career	
Knowing the characteristics of protean careers	
Know the concept of career planning	
Knowing how to build a career development system	
Understand the history of the industrial revolution	
Knowing the changes in the industrial era 4.0	
Knowing career prospects in the industrial era 4.0	
Knowing the non-technical skills that must be possessed in the industrial era 4.0	
Understand the internationalization of business	
Understand international business HR challenges	
Understand the differences in HRM between countries	
Understand staffing of global organizations	
Understand international assignment factors	
Understand differences and similarities in HR practices between countries and influencing factors including culture, economic syste	ems, law, and international relations
DESCRIPTION	
DESCRIPTION Answer questions from week 1-16 material	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 %	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this course	
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this course IMPLEMENTATION SCHEDULE	
DESCRIPTIONAnswer questions from week 1-16 materialWORKING METHODThe questions are done through e-learning lmsslc .polinema.ac.idOUTER FORMATWork Object: UAS Outer Form: student answersINDICATORS, CRITERIA AND WEIGHT ASSESSMENTConformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this courseIMPLEMENTATION SCHEDULE 17th week	120 minutes
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this course IMPLEMENTATION SCHEDULE 17th week OTHERS REQUIRED:	120 minutes
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this course IMPLEMENTATION SCHEDULE 17th week OTHERS REQUIRED:	120 minutes
DESCRIPTION Answer questions from week 1-16 material WORKING METHOD The questions are done through e-learning lmsslc .polinema.ac.id OUTER FORMAT Work Object: UAS Outer Form: student answers INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers: 10 0 % The UAS assessment weight is 35% of 100% of the assessment for this course IMPLEMENTATION SCHEDULE 17th week OTHERS REQUIRED:	120 minutes





ASSESSMENT AND EVALUATION PLAN Entrepreneurship

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Understand and be able to explain the basic concepts and scope of Digital Entrepreneurship (DE)	 Introduction to Digital Entrepreneurship (DE) Types of Digital Startups Book 1, chapter 1 Book 2, chapter 1 		Quiz 1: 20 % Quiz 2: 20 % UTS: 30 % UAS: 30 %
2	Know the process of identifying opportunities and being able to generate technology-based business ideas.	Identify technology-based business opportunities and ideas 1. Identify opportunities 2. Idea generating techniques 3. Techniques increase creativity Book 1, chapter 2 Book 2, chapter 3		
3	Understand the concept of feasibility analysis of DE ideas	 Feasibility analysis of the idea of Digital Entrepreneurship Product/service feasibility analysis Industry/target market feasibility analysis Financial feasibility analysis Book1, chapter3 Book 2, chapter 4 		
4	Understand the concept of feasibility analysis of DE ideas	 Feasibility analysis of the idea of Digital Entrepreneurship Organizational feasibility analysis Industry and competitor analysis Book1, chapter3 chapter5 Book 2, chapter 4 		
5-6	Know various kinds of marketing and sales techniques in DE	 Marketing and sales in DE Segmentation, Targeting, Positioning 7P of entrepreneurship Book1, chapter11 Book 2, chapter 8 		
7-8	Know the principles of financial management in DE	Financial management in DE1. Capital/funding strategy for DE2. Financial statementsBook1, chapter10		





		Book 2. chapter 8		
		, <u>r</u>		
9	Able to answer the questions tested	UTS		
10	Business planning presentation	Create a Business Plan	-	
10	Know the principles of managing	Business models in DE		
	finances in DE.	1. Business models in DE		
	Knowing business models in DE	2. Peer to peer business models, subscriptions,		
		licensing		
		3. Business model switching costs, continuity		
		Book1, chapter4		
		Book 3		
			_	
12	Able to apply the main principles in	Making a DE business plan		
	preparing an DE business plan	1. DE business plan structure		
		2. Competitive advantage concept		
		4. Business pitching techniques		
		Books chapter 12		
			-	
13	Able to apply DE business model	DE business model validation		
	validity testing techniques	1. Business model validation 2. Lean startup methods		
		3. Customer development focus		
		Book3		
14	Able to apply DE business model	DE business model innovation		
	validity testing techniques	1. Trigger questions		
		2. Napkin sketches		
		3. Applying constraints 4. Business model prototyping		
		Book 2. chapter 16		
		, T		
15	Be able to choose the type of legal	Legal aspects and intellectual property in DE		
	legal entity to create a DE company	1. Ethics in DE 2. Legal antities in DE		
		2. Legal chilles III DE 3. Intellectual property protection		
		Book1, chapter7, chapter12		
		Book 2, chapter 2, chapter 3		





16	Able to evaluate the growth potential of a DE business	 Growth strategy in DE 1. The concept of economies of scale, economies of scope, market leadership 2. Internal growth strategy 3. External growth strategy 4. Business expansion Book 1, chapter 13, chapter 14 		
17	Able to answer the questions tested	UAS		
		TOTAL WEIGHT	100%	





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SUBJ			ENTREPRENEURS	SHIP				
COD	E		RTI195001	WEIGHT (credits) / h	our	2 credits/ 4 hours	SEMESTER	1
SUPP	ORTING LECTURER		Agung Nugroho Pran	nudhita, ST, MT				
ASSE	SSMENT FORMS							
Quiz	L							
ASSE	SSMENT TITLE							
Evalu	ation of chapters 1-3							
SUB (COURSE LEARNING AC	CHIEVEMEN	TS					
Studen	nts are able to understand th	e material fror	m chapters 1 to 3					
DESC	CRIPTION							
Devel	op proposals							
indivi	dual assignments to prepare	e Proposals A	bout plans to open a sn	nall business (Business Plan)	and take advantag	e of marketing in the Digita	l era with the division of g	group tasks
as foll	ows:	-						
no	Division of tasks	Types of pr	oducts					
1. Group I Various food/drinks								
2. Group II Various fruits/vegetables/ornamental plants								
3.	Group III	Various tran	nsportation / travel / De	elivery of package goods				
4.	Group IV	Various Clo	othing / sports / t-shirts	/ office				
5. Group V Various e		Various ele	ctronic / household equ	lipment				

Writing Details:

6.

- 1) Cover (sample attached)
- 2) Topic/title

Group VI

- 3) Spacing 1.50
- 4) LetterT. New Roman font size 12

Collected in each group leader and handed over to class leader onweek 5 of 2021 and sent to lecturer via WA or LMS.

Various cosmetics / mini market

WORKING METHOD
Individual Report
OUTER FORMAT
A. Student Report on Business Plan





INDICATORS, CRITERIA AND WEIGHT ASSESSMENT

(indicator)

: 100 %

The weight for Quiz 1 is 20% of 100% for this course

IMPLEMENTATION SCHEDULE

Collected at week 5

OTHERS REQUIRED:

REFERENCES

1. Barringer, BR, & Ireland, RD (2016). Entrepreneurship Successfully Launching New Ventures, Fifth Global Edition.

2. Scarborough, NM, & Cornwall, JR (2011). Essentials of entrepreneurship and small business management . London: Pearson.

Osterwalder, A., & Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers . John Wiley & Sons.





	MALANG STATE POLYTECHNIC						
EKNIK NEGERI 4	INFORMATION TECHNOLOGY DEPARTMENT						
STUDY PROGRAM : D4 INFORMATICS ENGINEERING							
ASSESSMENT METHOD							
SUBJE	ENTREPRENEURSHIP						
CODE	RTI195001 WEIGHT (credits) / hour 2 credits/ 4 hours SEMESTER 1						
SUPPORTING	Agung Nugroho Pramudhita, ST, MT						
LECTURER							
ASSESSMENT FORMS							
Quiz 2							
ASSESSMENT TITLE							
Evaluation of chapters 10-12							
SUB COURSE LEARNING A	ACHIEVEMENTS						
Students are able to understand	material from chapters 10 to 12						
DESCRIPTION							
1. Name, explain, an	id give examples of marketing and sales strategy forms for a company that offers products or services. What marketing mix implementation does the						
company do to ac	nieve the company's goals?						
2. Do the steps in po	int 1 above and apply it to the company you are going to start.						
3. Explain the defini	tion of a marketing plan, goals, benefits, and how to prepare a complete marketing plan						
4. Explain the Defin	tion of Strategy Marketing, Purpose, Functions And Types Strategy Marketing Most complete						
5. Explain <u>the Defin</u>	tion of Management Marketing, Tasks, Objectives, Functions, Concepts And Elements Management Marketing Complete						
WORKING METHOD							
Individual							
OUTER FORMAT							
Student Answers							
INDICATORS, CRITERIA	ND WEIGHT ASSESSMENT						
(indicator)	: 100 %						
The weight for Quiz 2 is 20% o	f 100% for this course						
IMPLEMENTATION SCHE	DULE						
Collected at week 12							
OTHERS REQUIRED:							
REFERENCES							
1. Barringer, BR, & Ireland, I	RD (2016). Entrepreneurship Successfully Launching New Ventures, Fifth Global Edition.						
2 Southarough NM & Com	wall IB (2011) Essentials of antwannengewishing and small business management. London, Doerson						





Osterwalder, A., & Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers . John Wiley & Sons.

Supporters:

1. Following (internet etc.)

\land	MALANG STATE P	OLYTECHNIC			
ENNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT				
ST S	STUDY PROGRAM	: D4 INFORMATICS ENG	INEERING		
	ASSESSMENT METHOD				
SUBJE	ENTREPRENEURSHIP				
CODE	RTI195001	WEIGHT (credits) / hour	2 credits/ 4 hours	SEMESTER	1
SUPPORTING	Agung Nugroho Pram	udhita, ST, MT			
LECTURER					
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
Evaluation of chapters 1-8	Evaluation of chapters 1-8				
SUB COURSE LEARNING ACHIEVEMENTS					
Students are able to understand the material from chapters 1 to 8					
DESCRIPTION					
DOING QUESTIONS					





 What is the Title of Independent/Individual Assignment Proposal Digital Entrepreneurship Business Plan Why did you choose that title? Describe What are the goals and benefits for students/relatives and POLYMA Have you practiced/tried the program product that you planned/proposed? Describe the production process What marketing plan and market coverage will you achieve? Describe the SWOT Analysis related to your product How much does it cost to manufacture and sell these products (details) 					
2. Explain the object	ves of learning Digital Entrepreneurship, especial	y the final results for studen	ts (is it useful or not)?		
3. What is meant by	vlarketing and sales? And what is the difference be	tween marketing and sales e	explain?		
4. What do you think	about the impact of the existence of COVID-19, e	specially on the world econo	omy, explain. (see on the inte	ernet)	
WORKING METHOD					
Individual					
OUTER FORMAT					
Student Answers					
INDICATORS, CRITERIA A	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
(indicator)	(indicator) $: 100\%$				
The UTS assessment weight is	30% of 100% of the assessment for this course				
IMPLEMENTATION SCHEDULE					
Week 9 200 minutes					
OTHERS REQUIRED:					
REFERENCES					
1. Barringer, BR, & Ireland, I	1. Barringer, BR, & Ireland, RD (2016). Entrepreneurship Successfully Launching New Ventures, Fifth Global Edition.				
2. Scarborough, NM, & Cornwall, JR (2011). Essentials of entrepreneurship and small business management. London: Pearson.					
5. Osterwalder, A., & Figheur, F. (2010). Business model generation. a nanabook for visionaries, game changers, and chattengers . John whey & Sons.					
Supporters:					
1. Following (internet etc.)					
COLUMN NE GERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING ASSESSMENT METHOD				
SUBJE ENTREPRENEURSHIP					
CODE	RTI195001 WEIGHT (credits) / hor	r 2 credits/ 4 hours	SEMESTER	1	





SUPPORTING	Agung Nugroho Pramudhita, ST, MT				
	ECTURER				
ASSESSMENT FORMS					
UAS					
ASSESSMENT TITLE					
Evaluation of chapters 1-16					
SUB COURSE LEARNING A	ACHIEVEMENTS				
Students are able to understand	material from chapters 1 to 16				
DESCRIPTION					
Business Proposals that have be	een made				
WORKING METHOD					
Individual					
OUTER FORMAT					
The outer target is to be able to	take part in competitions and those who qualify for funding get an A				
INDICATORS, CRITERIA	AND WEIGHT ASSESSMENT				
(indicator)	: 100 %				
The UAS assessment weight is	30% of 100% of the assessment of this course				
IMPLEMENTATION SCHE	DULE				
Week 17					
OTHERS REQUIRED:					
REFERENCES					
1. Barringer, BR, & Ireland, RD (2016). Entrepreneurship Successfully Launching New Ventures, Fifth Global Edition.					
2. Scarborough, NM, & Cornwall, JR (2011). Essentials of entrepreneurship and small business management. London: Pearson.					
3. Osterwalder, A., & Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley & Sons.					
Supporters:					

1. Following (internet etc.)





Mobile Programming

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	 Students are able to explain the flutter SDK installation process on the operating system used (C2) Students are able to make hello world projects and run applications to the emulator / device they have. (C6) Students are able to create a Git repository for the created hello world project (C6) 	 Install Flutter SDK on Windows Operating System Install Visual Studio Code Install Git Emulator Configuration Android Device Configuration Create and publish the git project hello world repository to github. 		Duty: 30% Quiz 1: 10% Quiz 2: 10% UTS: 25% UAS: 25%
2	 Students are able to explain the basics of Flutter Programming (C2) Students are able to make tree widgets and compile flutter applications (C6) 	Get to know widgetsCreate widget treesCompile the flutter application		
3	 Students are able to explain the basics of Flutter Programming (C2) Students are able to make flutter applications based on dart programming (C6) Students are able to distinguish statefulWidget and statelessWidget (C2) 	 Create a flutter application based on dart programming Understand the basic state Understand and the difference between statefulWidget and statelessWidget Create a flutter application using statefulWidget and statelessWidget 		
4	 Students are able to explain and map data to widgets (C2, C3) Students are able to explain and create custom list items (C2, C3) Students are able to explain and create container, text, time, and theming styling (C2, C3) 	 Understanding and mapping data to widgets Understand and create custom list items Understand and create container, text, time styling Understanding and creating Theming 		
5	Quiz 1			
6	 Students are able to create applications that connect to other pages using the navigator (C6) Students are able to create functions that can pass data from one page to another (C6) 	 Create applications that connect with other pages using the navigator Create a function that can pass data from one page to another 		





7	 Students are able to create applications that can receive input from the user (C6) Students are able to create applications that can process data according to the action chosen by the user (C6) 	State Management and User Input	
8		UTS	
9	 Students are able to create applications that can retrieve data from the server (C6) Students are able to explain about JSON (C2) 	Http Request, User Auth and Animation	
10	Students are able to create applications that can create, update and delete data from the server (C6)	Http Request, User Auth and Animation	
11	 Students are able to explain No SQL (C2) Students can create applications that can get and create data on the server (C6) 	Firestore	
12		Quiz 2	
13	Students are able to create applications that can update and delete data on the server (C3)	Firestore	
14	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks	
15	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks	





16	Students are able to create flutter applications consisting of user auth and storage in the cloud (C3)	Project Tasks		
17	UAS			
TOTAL WEIGHT				100%





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ALK NE GER	MALANG STATE PULY TECHNIC INFORMATION TECHNOLOCY DEDADTMENT					
steam Ape	INFORMATION TECHNOLOGY DEPARTMENT STUDV DDOCDAM • DA INFODMATICS FNCINFEDINC					
ASSESSMENT METHOD						
SUBIE SUBIE	ASSESSMENT METHOD					
CODE	MODILE FROGRAMMING DTI105003 WFICHT (oradits) / hours 3 oradits/6 hours SEMESTED 1					
SUPPORTING	Habibie Ed Dien S. Kom. MT.					
LECTURER	Habible Ed Dieli, S. Kolli., MT					
ASSESSMENT FORMS						
Ouiz 1 + UTS						
ASSESSMENT TITLE						
Evaluation of material chapters	1-7					
SUB COURSE LEARNING A	ACHIEVEMENTS					
Students are able to understand	and apply material 1-7					
DESCRIPTION						
Create Mini Projects						
1. EBT (New, Renewable	Energy) Power Plant Monitoring System					
2. Agriculture and Livesto	bek Monitoring System (screen similar to no.1)					
3 Sempro Schedule Infor	mation System and D4. TI Thesis Session					
5. Sempro Senedule Infor	mation System and D4-11 Thesis Session					
WORKING METHOD						
Group						
OUTER FORMAT						
Student-produced Mini Projects	3					
INDICATORS, CRITERIA A	ND WEIGHT ASSESSMENT					
(indicator)	(indicator) :%					
The score for Quiz 1+UTS is 35% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
Weeks 7-8 (2 weeks)						
OTHERS REQUIRED:						
REFERENCES						
Main :						
1. Flutter & Dart - The Complete Guide [2021 Edition] (<u>https://www.udemy.com/course/learn-flutter-dart-to-build-ios-android-apps/</u>)						
Supporters:						
1. Alessandria, S. (2020). Flutter Projects: A practical, project-based guide to building real-world cross-platform mobile applications and games. Packt Publishing Ltd.						





Biessek, A. (2019). Flutter For Beginners An Introductory Guide to Building cross-platform Mobile Applications with Flutter and Dart 2. Packt Publishing Ltd.
 Napoli, ML (2019). Beginning Flutter A Hands On Guide To App Development. https://doi.org/10.1002/9781119550860





Indonesian

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to use Indonesian according to the context of official and unofficial use.	 The function and position of the Indonesian language (UU 24 of 2009). Language attitude (Prioritize Indonesian, preserve regional languages, and master foreign languages.) Use of official and unofficial language. Use of good and correct language. 		Task 1: 5% Task 2: 5% Task 3: 5% Task 4: 5% Task 5:30% UTS: 30% UAS: 20%
2	Students are able to write effective sentences with the correct spelling and choice of words.	 Use of Indonesian spelling (PUEBI). Word selection. Effective use of sentences. 		
3	Students are able to write short messages and formal electronic letters.	 Ethics of writing and sending short messages and e-mails. Discourse structure in short messages and official forms of e-mail. The choice of words and sentences is effective in writing formal short messages and electronic letters. 		
4	Students are able to make formal phone calls and conduct job interviews.	 Material review 1-3 Telephone etiquette and job interviews. Discourse structure in telephone and job interviews. The choice of words and sentences is effective in writing formal short messages and electronic letters. 		
5	Students are able to write job applications and curriculum vitae.	 Concept of job application and curriculum vitae in digital era. Job application structure. The choice of words and sentences is effective in writing job applications and curriculum vitae. 		
6	Students are able to make presentation views of scientific research articles.	 Map ideas from readings. Arrange slides for scientific presentations. 		




7	Students make presentations on	1. Presentation structure.			
	scientific topics.	2. The choice of words and sentences is			
		effective in presentations.			
		3. Interesting and effective presentation.			
8		UTS			
9	Students are able to identify the	1. Structure and characteristics of research			
	structure and characteristics of scientific	proposals.			
	writing (research proposals, theses, &	2. Thesis structure and characteristics.			
	scientific articles)	3. Structure and characteristics of scientific			
	,	articles.			
10	Students are able to understand popular	<i>1</i> . Reading technique: <i>scanning</i> and <i>skimming</i> .			
	scientific news/readings and write	2. Write a quote along with the source.			
	theoretical quotes on reading cards.	(Introduction Section)			
11	Students are able to understand	1. Reading technique: <i>scanning</i> and <i>skimming</i> .			
	scientific reading (books & scientific	2. Write a quote along with the source. (Theory			
	articles) and write theoretical quotations	Study Section)			
	onto reading cards.	5 /			
12	Students are able to compile the	1. Search for data and facts related to the issues			
	introductory part of a mini research	raised as research topics.			
	proposal.	2. Arrangement of ideas in the introductory			
		section.			
		3. Citation techniques with paraphrasing.			
13	Students are able to write logically and	1. Proper and clear preparation of the			
	effectively the basic theory/literature	theoretical basis/literature review section.			
	review using the proper Indonesian	2. Citation techniques with paraphrasing.			
	language in a research proposal.				
14	Students are able to explain research	The way of writing the research method section			
	methods using proper Indonesian in	is precise and straightforward.			
	mini research proposals.				
15	Students are able to write a list of	Compile a valid and appropriate list of			
	references correctly in a research	references.			
	proposal.				
16	Students are able to independently edit	Independent editing of content and language.			
	their mini research proposals.				
17	17 UAS				
		TOTAL WEIGHT		100%	





	MALANG STAT	E POLYTECHNIC				
WHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
and the second second	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	•	ASS	SESSMENT METHOD			
SUBJE	INDONESIAN					
CODE	RTI195006	CODE	RTI195006	CODE	RTI195006	
SUPPORTING LECTURER	Rizki Putri Rama	dhani, SS, M.Pd.				
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS: Presentation of Results of	Reading Scientific	Articles				
SUB COURSE LEARNING AG	CHIEVEMENTS					
Students are able to understand m	naterial 1-8					
DESCRIPTION						
Student Presentation						
WORKING METHOD						
Individual						
OUTER FORMAT						
Presentation Results						
INDICATORS, CRITERIA AN	ND WEIGHT ASSE	SSMENT				
Conformity of answers: 100%	: %					
The UTS assessment weight is 20	0% of 100% of the as	ssessment for this course				
IMPLEMENTATION SCHED	ULE					
9th week	-		100 minutes			
OTHERS REQUIRED:						
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
REFERENCES						
Ramadhani, Rizki Putri. 2019. Indonesian for Business and Industry. Malang: Polinema Press.						
Ministry of Education and Culture of the Republic of Indonesia. 2001. Big Indonesian Dictionary. Jakarta: Balai Pustaka.						
HP Achmad and Alek. 2016. Indonesian for Higher Education: Substance of Study and Its Application . Jakarta: Erlangga Publisher.						
Kasali, Rhenald. 2006. Making Successful Presentations . Jakarta: PT Gramedia Pustaka Utama.						
Ministry of Education and Cultur	e. 2016. General Gu	idelines for Indonesian Spelli	ing . Jakarta: Language Deve	elopment and Develop	ment Agency.	
Trim, Bambang, 2017, 200+ Script Editing and Publishing Solutions, Jakarta: Earth Script.						









	MALANG STATI	E POLYTECHNIC				
NHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
			ASSESSMENT METHOD			
SUBJE	INDONESIAN					
CODE	RTI195006	CODE	RTI195006	CODE	RTI195006	
SUPPORTING LECTURER	Rizki Putri Rama	dhani, SS, M.Pd.				
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS: multiple choice						
SUB COURSE LEARNING AG	CHIEVEMENTS					
Students are able to understand m	naterial 1-16					
DESCRIPTION						
Students work on the multiple ch	oice questions that ha	ave been provided				
WORKING METHOD						
Individual						
OUTER FORMAT						
Student Answers						
INDICATORS, CRITERIA AN	ND WEIGHT ASSE	SSMENT				
Conformity of answers: 100%	: %					
The UAS assessment weight is 2	0% of 100% of the as	ssessment for this course	2			
IMPLEMENTATION SCHED	IILE					
17th week	ULL .		100 minute	:5		
OTHERS REOUIRED:						
REFERENCES						
Ramadhani, Rizki Putri. 2019. Indonesian for Business and Industry. Malang: Polinema Press.						
Ministry of Education and Cultur	e of the Republic of	Indonesia. 2001. Big Ind	lonesian Dictionary . Jakarta: H	Balai Pustaka.		
HP Achmad and Alek. 2016. Indonesian for Higher Education: Substance of Study and Its Application . Jakarta: Erlangga Publisher.						
Kasali, Rhenald. 2006. Making Successful Presentations. Jakarta: PT Gramedia Pustaka Utama.						
Ministry of Education and Cultur	re. 2016. General Gu	idelines for Indonesian S	Spelling . Jakarta: Language De	evelopment and Develo	pment Agency.	
Trim. Bambang, 2017, 200+ Script Editing and Publishing Solutions, Jakarta: Earth Script.						









### ASSESSMENT AND EVALUATION PLAN

### Interface Design

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Knowing and explaining what is human and computer interaction (C2)</li> <li>Explain the field of study related to IMK (C2)</li> <li>Explain system development aids (C2)</li> </ul>	Human and computer interface, basic concepts of human and computer relations, fields of study related to human and computer interaction, system development tools	<ul> <li>Task 1: Oral test</li> <li>Quiz 1 (5 questions)</li> <li>UTS (5 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 2.3% Task 2: 2.3% Task 3: 2.3% Task 4: 2.3% Task 5: 2.3% Task 6: 2.3%
2	Students are able to explain the basic concepts of human factors, computer factors and are able to explain the relationship between human capabilities and limitations with the interaction design process of a software or hardware system (C2).	human factor : Five senses Limitations human factor Mental influence and psychology against design interaction Individual differences Computer factor: Development interaction technology Design link interaction with technology inputs/outputs Hardware technology or software for users with special needs	<ul> <li>Task 2: group discussion</li> <li>Quiz 1 (5 questions)</li> <li>UTS (5 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 7: 2.3% Quiz 1: 5% UTS: 30%
3	Able to group information based on the appropriate category and represent it with a symbol (icon) (C3)	<ul> <li>Categorize information into categories.</li> <li>The use of symbols/images/icons that can represent information in a mind map.</li> </ul>	<ul> <li>Task 3: written assignment</li> <li>Quiz 1 (5 questions)</li> <li>UTS (6 questions)</li> <li>UAS (3 questions)</li> </ul>	





4	Students are able to explain and apply the basic concepts of dialogue design and dialogue styles/variety of dialogues (C2) (C3)	<ul> <li>CommandLanguage</li> <li>WIMPs</li> <li>Direct Manipulation (DM)</li> <li>PDA &amp; Pen</li> <li>Speech and natural language</li> <li>Software User Interfaces</li> </ul>	<ul> <li>Task 4: written assignment</li> <li>Quiz 1 (5 questions)</li> <li>UTS (6 questions)</li> <li>UAS (3 questions)</li> </ul>	
5		Quiz 1		
6	Students can explain the basic concepts of devices used in human and computer interaction (C2).	<ul> <li>Overview, utilities</li> <li>Types of task analysis</li> <li>Source and use of information</li> <li>Data I/O</li> <li>Represents data</li> </ul>	<ul> <li>Task 5: written assignment</li> <li>UTS (6 questions)</li> <li>UAS (5 questions)</li> </ul>	
7	Students explain the development of interactive tools from time to time. (C2)	<ul> <li>The latest development of interactive tools used by humans from time to time</li> <li>Textual input tool</li> <li>Pointing and picking device</li> <li>Touch sensitive panel (touch-screen)</li> <li>Display screen</li> <li>Display processor</li> <li>Effect of interactive devices</li> </ul>	<ul> <li>Task 6: presentation</li> <li>UTS (6 questions)</li> <li>UAS (5 questions)</li> </ul>	
8	<ul> <li>Students are able to explain the principles of computer system interface design on various platforms and contexts of need. (C2)</li> <li>Students are able to create a display design using Views Worksheets and Views Semantic Nets (C3)</li> </ul>	<ul> <li>Understand the principles and guidelines of display design</li> <li>Understand and be able to make simple tools for display design</li> <li>understand and be able to create a display semantic net</li> </ul>	<ul> <li>Task 7: written assignment</li> <li>UTS (6 questions)</li> <li>UAS (5 questions)</li> </ul>	
9		UTS		
10	Students are able to know and be able to explain and follow the stages of interface design using storyboards and prototypes (C2) (C3)	<ul> <li>Understand the principles and instructions for display design with storyboards and prototypes</li> <li>Understand and be able to create storyboards and prototype user interfaces</li> </ul>	<ul> <li>Task 8: written assignment</li> <li>Quiz 2 (7 questions)</li> <li>UAS (5 questions)</li> </ul>	Task 8: 2.3% Task 9: 2.3% Task 10: 2.3% Task 11: 2.3% Task 12: 2.3%





11	Knowing and being able to explain the influence of ergonomic aspects on the design of human interfaces with computers. (C2)	<ul> <li>Know and be able to explain measurements and anthropometrics</li> <li>Know and be able to explain the ergonomic aspects of the work station</li> <li>Know and be able to explain lighting effects, display screens, temperature and sound quality, sound disturbances, occupational health and safety, work habits</li> </ul>	<ul> <li>Task 9: oral test</li> <li>Quiz 2 (7 questions)</li> <li>UAS (5 questions)</li> </ul>	Task 13: 2.3% Quiz 2: 5% UAS: 30%	
12	Know and be able to explain the evaluation techniques for the design of human interfaces with computers. (C2).	<ul> <li>Evaluation technique</li> <li>Understanding</li> <li>Method</li> <li>Evaluation tools and devices</li> <li>Evaluation flow</li> <li>Implementation example</li> </ul>	<ul> <li>Task 10: oral test</li> <li>Quiz 2 (6 questions)</li> <li>UAS (5 questions)</li> </ul>		
13		Quiz 2			
14	Students are able to explain and apply previously taught material in the form of case studies and make application UI designs (large course assignments) (C2) (C3)	User Interface Prototyping	• Task 11: prototype + presentation		
15	Students are able to explain and apply previously taught material in the form of case studies and make application UI designs (large course assignments) (C2) (C3)	User Interface Prototyping	• Task 12: prototype + presentation		
16	Students are able to explain and apply previously taught material in the form of case studies and make application UI designs (large course assignments) (C2) (C3)	User Interface Prototyping	• Task 13: prototype + presentation		
17 UAS					
		TOTAL WEIGHT		100%	



## MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT **STUDY PROGRAM: D4 INFORMATICS ENGINEERING ASSESSMENT METHOD**





SUBJECT	Interface Design				
CODE	RTI203001WEIGHT (credits) / hour2 credits / 4 hoursSEMESTER3				
SUPPORTING LECTURER	1. Anugrah Nur Rahman	nto, S.Sn., M.Ds.			
	2. Retno Damayanti, S.I	Pd., MT			
	3. Muhammad Unggul I	Pamenang, S.St., MT			
	4. Ariadi Retno Ririd, S	. Kom., M. Kom.			
	5. Aulia Zahra Musthafa	awi SST., M. Kom.			
ASSESSMENT FORMS					
Online test					
ASSESSMENT TITLE					
Quiz 1					
SUB COURSE LEARNING ACHIEV	EMENTS				
Knowing and explaining what is human	and computer interaction (C2)				
Explain the field of study related to IMK	(C2)				
Explain system development aids (C2)			-his hataa ay haaraa ay ahii		4 <b>4</b> :
design process of a software or hardware	$C_{C2}$	ter factors and are able to explain the relations	ship between numan capabil	intes and limitations with the in	teraction
Able to group information based on the a	system (C2).	ent it with a symbol (icon) (C3)			
Students are able to explain and apply the	e basic concepts of dialogue des	ign and dialogue styles/variety of dialogues (	$(C_{2})$ $(C_{3})$		
DESCRIPTION	e busie concepts of dialogue des	ight and dialogue styles, variety of dialogues (	(02) (03)		
Answer quiz questions from meeting mat	terial 1-4				
WORKING METHOD					
The questions are done through e-learnin	g lmsslc .polinema.ac.id				
OUTER FORMAT					
Job Object: quiz					
Outer Form: student quiz answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers: 10 0 %					
The score for Quiz 1 is 5% of 100% for this course					
IMPLEMENTATION SCHEDULE					
4th week 60 minutes					
OTHERS REQUIRED:					
REFERENCES					
Galitz, WO (2007). The essential guide to	o user interface design: an intro	duction to GUI design principles and technique	ues. John Wiley & Sons.		
Teaching Module of Human and Computer Interaction Malang State Polytechnic					









	MALANG STATE POLYTECHNIC					
ENNIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT					
( ) VIII	<b>STUDY PROGRAM: D4 IN</b>	STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
		ASSESSMENT METHOD				
SUBJA	Interface Design	iterface Design				
CODE	RTI203001	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	1. Anugrah Nur Rahma	anto, S.Sn., M.Ds.				
	2. Retno Damayanti, S.	.Pd., MT				
	3. Muhammad Unggul	Pamenang, S.St., MT				
	4. Ariadi Retno Ririd, S	S. Kom., M. Kom.				
	5. Aulia Zahra Musthaf	fawi SST., M. Kom.				
ASSESSMENT FORMS						
Online test						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING ACHIEVI	EMENTS					
Students are able to know and be able to	explain and follow the stages of	f interface design using storyboards and prote	otypes (C2) (C3)			
Knowing and being able to explain the in	ifluence of ergonomic aspects o	on the design of human interfaces with compu	iters. (C2)			
Know and be able to explain the evaluation	on techniques for the design of	human interfaces with computers. (C2).				
DESCRIPTION						
Answer quiz questions from meeting mat	terial 10-12					
WORKING METHOD						
The questions are done through e-learnin	g lmsslc .polinema.ac.id					
OUTER FORMAT						
Job Object: quiz						
Outer Form: student quiz answers						
<b>INDICATORS, CRITERIA AND WEI</b>	IGHT ASSESSMENT					
Conformity of answers: 10 0 %						
The weight for Quiz 2 is 5% of 100% for this course						
IMPLEMENTATION SCHEDULE						
Week 13 60 minutes						
OTHERS REQUIRED:						
REFERENCES						
Galitz, WO (2007). The essential guide to user interface design: an introduction to GUI design principles and techniques. John Wiley & Sons.						
Teaching Module of Human and Computer Interaction Malang State Polytechnic						





	MALANG STATE POLYTECHNIC					
LEWNIK NEGER, MY	INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM: D4 IN	FORMATICS ENGINEERING				
	ASSESSMENT METHOD					
SUBJE	Interface Design					
CODE	RTI203001	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 3		
SUPPORTING LECTURER	1. Anugrah Nur Rahma	anto, S.Sn., M.Ds.				
	2. Retno Damayanti, S.	.Pd., MT				
	3. Muhammad Unggul	Pamenang, S.St., MT				
	4. Ariadi Retno Ririd, S	S. Kom., M. Kom.				
	5. Aulia Zahra Musthaf	fawi SST., M. Kom.				
ASSESSMENT FORMS						
Online test						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING ACHIEV	EMENTS					
Knowing and explaining what is human	and computer interaction (C2)					
Explain the field of study related to IMK	(C2)					
Explain system development aids (C2)						
Students are able to explain the basic cor	ncepts of numan factors, comput	iter factors and are able to explain the re-	lationship between numan capabi	lifties and limitations with the interaction		
design process of a software or hardware	e system (C2).	(1, 1, 2, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,				
Able to group information based on the a	appropriate category and represe	aign and dialague styles/veriety of diala	$\operatorname{cup}_{\mathcal{A}}(C2)(C2)$			
Students are able to explain and apply in Students can explain the basic concepts (	of devices used in human and co	sign and dialogue styles/variety of dialog	gues $(C2)$ $(C3)$			
Students can explain the development of inte	eractive tools from time to time	(C2)				
Students explain the development of inte	es of computer system interface	design on various platforms and context	ts of need (C2)			
Students are able to create a display desi	ign using Views Worksheets and	Views Semantic Nets (C3)	is of field: (C2)			
DESCRIPTION	Bit using views worksheets und					
Answer questions from meeting material	1 1-8					
WORKING METHOD						
The questions are done through e-learning Imsslc. polinema.ac.id						
OUTER FORMAT						
Job Object: quiz						
Outer Form: student quiz answers						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers: 10.0 %						
UTS assessment weight is 30 % of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
9th week			60 minutes	3		





### **OTHERS REQUIRED:**

#### REFERENCES

Galitz, WO (2007). The essential guide to user interface design: an introduction to GUI design principles and techniques. John Wiley & Sons.

Teaching Module of Human and Computer Interaction Malang State Polytechnic





	MALANG STATE POLY	TECHNIC			
ANIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT				
ALL	<b>STUDY PROGRAM: D4</b>	INFORMATICS ENGINEERING			
		ASSESSMENT METHOD			
SUBJE	Interface Design				
CODE	RTI203001	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 3	
SUPPORTING LECTURER	1. Anugrah Nur Rahr	manto, S.Sn., M.Ds.			
	2. Retno Damayanti,	S.Pd., MT			
	3. Muhammad Ungg	ul Pamenang, S.St., MT			
	4. Ariadi Retno Ririd	d, S. Kom., M. Kom.			
	5. Aulia Zahra Mustl	hafawi SST., M. Kom.			
ASSESSMENT FORMS					
Online test					
ASSESSMENT TILE					
SUB COUDSE LEADNING ACHIEVI	FMFNTS				
Knowing and explaining what is human	and computer interaction (C2	2)			
Explain the field of study related to IMK	(C2)	.)			
Explain system development aids (C2)	(02)				
Students are able to explain the basic con	cepts of human factors, com	puter factors and are able to explain the re	elationship between human capab	bilities and limitations with the interaction	
design process of a software or hardware	system (C2).	1 1	1 1		
Able to group information based on the a	ppropriate category and repr	resent it with a symbol (icon) (C3)			
Students are able to explain and apply the	e basic concepts of dialogue	design and dialogue styles/variety of dialo	ogues (C2) (C3)		
Students can explain the basic concepts of	of devices used in human and	l computer interaction (C2).			
Students explain the development of inte	ractive tools from time to tim	ne. (C2)			
Students are able to explain the principle	s of computer system interfac	ce design on various platforms and contex	ts of need. (C2)		
Students are able to create a display desig	gn using Views Worksheets a	and Views Semantic Nets (C3)			
Students are able to know and be able to	explain and follow the stages	s of interface design using storyboards and	d prototypes (C2) (C3)		
Knowing and being able to explain the in	fluence of ergonomic aspect	s on the design of human interfaces with a	computers. (C2)		
Know and be able to explain the evaluation techniques for the design of human interfaces with computers. (C2).					
Students are able to explain and apply previously taught material in the form of case studies and make application UI designs (large course assignments) (C2) (C3)					
DESCRIPTION					
Answer questions from meeting material 1-10					
The questions are done through e-learning lmsslc, nolinema ac id					
OUTER FORMAT					
Job Object: auiz					
Outer Form: student quiz answers					
INDICATORS CRITERIA AND WEI	IGHT ASSESSMENT				





#### Conformity of answers: 100% UAS assessment weight is 30 % of 100% of the assessment of this course **IMPLEMENTATION SCHEDULE** Week 17 60 minutes **OTHERS REQUIRED:** REFERENCES Galitz, WO (2007). The essential guide to user interface design: an introduction to GUI design principles and techniques. John Wiley & Sons. Teaching Module of Human and Computer Interaction Malang State Polytechnic

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NECO	MALANG STATE POLYTECHNIC					
LEANIN DE RI AN	INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJECT	ADBO					
CODE	RTI203002	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz material 1-3						
SUB COURSE LEARNING A	CHIEVEMENTS					
Able to create Class diagrams ac	cording to specified	business needs				
DESCRIPTION						
Able to create Class diagrams according to specified business needs						
DESCRIPTION						
2. Answer Quiz questions related to material 1-3						
WORKING METHOD						





• The questions are done through e-learning lms.polinema.ac.id				
• Quiz done in 35 minutes				
OUTER FORMAT				
Job Object: Quiz				
Outcome Form: multiple choice student Quiz answers				
IMPLEMENTATION SCHEDULE				
4th week	35 minutes			
OTHERS REQUIRED:				
REFERENCES				
Hunt, J. (2000). The Unified Process for Practitioners: Object-oriented Design, the UML and	l Java (Vol. 12). Springer Science & Business Media.			
Lee, M., Kim, H., Kim, J., Lee, J., & Gum, D. (2005). StarUML 5.0 user guide. 2009-03-11	. http://staruml, sourceforge, net/docs/user-guide (en)/toc. html.			





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( ) ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING				
		ASS	ESSMENT METHOD				
SUBJECT	ADBO						
CODE	RTI203002	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3		
SUPPORTING							
LECTURER							
ASSESSMENT FORMS							
Quiz 2							
ASSESSMENT TITLE							
Quiz material 10-13							
SUB COURSE LEARNING A	CHIEVEMENTS						
1. Understand and remem	ber the System Arch	itecture					
2. Understand the use of S	System Architecture	. 12					
5. Onderstand the materia	ii nom meetings to u	5 15					
DESCRIPTION		d					
Able to create System Architect	ure in accordance wi	in specified business needs					
DESCRIPTION	1 10 12						
Answer Quiz questions related t	to material 10-13						
WORKING METHOD							
• The questions are done	through e-learning li	ms.polinema.ac.id					
Quiz done in 60 minute	es						
OUTER FORMAT							
• Job Object: Quiz							
Outcome Form: multip	le choice student Qui	z answers					
IMPI EMENTATION SCHEI	DILE						
14th week			60 minutes				
OTHERS REQUIRED.			00 minutes				
OTHERS REQUIRED.							
REFERENCES							





Hunt, J. (2000). The Unified Process for Practitioners: Object-oriented Design, the UML and Java (Vol. 12). Springer Science & Business Media. Lee, M., Kim, H., Kim, J., Lee, J., & Gum, D. (2005). StarUML 5.0 user guide. 2009-03-11]. http://staruml, sourceforge, net/docs/user-guide (en)/toc. html.

A CONTRACT OF CONTRACTON OF CONTRACTON OF CONTRACT.	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJECT	ADBO					
CODE	RTI203002	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING		·	·			
LECTURER						
ASSESSMENT FORMS						
Midterm exam						
ASSESSMENT TITLE						





UTS material 1-7	
SUB COURSE LEARNING ACHIEVEMENTS	
Students are able to apply use cases, activities, class diagrams, object diagrams, sequences, as	signment patterns in a business project.
DESCRIPTION	
Answer UTS questions related to use cases, activities, class diagrams, object diagrams, sequer	nces, assignment patterns in a business project.
WORKING METHOD	
• The questions are done through e-learning lms.polinema.ac.id	
• UTS is done in 60 minutes	
OUTER FORMAT	
• Work Object: UTS	
• Outcome Form: UTS student answers	
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers : 100%	
The UTS assessment weight is 20% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
8th week	60 minutes
OTHERS REQUIRED:	
REFERENCES	
Hunt, J. (2000). The Unified Process for Practitioners: Object-oriented Design, the UML and	Java (Vol. 12). Springer Science & Business Media.
Lee, M., Kim, H., Kim, J., Lee, J., & Gum, D. (2005). StarUML 5.0 user guide. 2009-03-11].	http://staruml, sourceforge, net/docs/user-guide (en)/toc. html.





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		ASS	ESSMENT METHOD		
SUBJECT	ADBO				
CODE	RTI203002	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3
SUPPORTING					
LECTURER					
ASSESSMENT FORMS					
Final exams					
ASSESSMENT TITLE					
UAS material 11-16					
SUB COURSE LEARNING A	CHIEVEMENTS				
Able to create timing d	iagrams according to	specified business requirement	nts		
• Able to create interacti	on summary diagram	s according to specified busine	ess needs		
• Able to make composit	tional structure diagra	ams according to specified bus	iness requirements		
Able to create compon	ent diagrams accordin	ng to specified business require	ements		
• Able to create package	s according to specifi	ed business needs			
• Able to make machine	step diagrams accord	ling to specified business need	S		
Able to create deploym	ient diagrams accordi	ing to specified business requir	rements		
DESCRIPTION					
Answer UAS questions related	to the concept				
WORKING METHOD		1 1			
• The questions are done	through e-learning li	ms.polinema.ac.id			
• UTS is done in 60 min	utes				
• work Object: UAS					
Outcome Form: studen	t UAS answers				
NDICATORS, URITERIA AND WEIGHT ASSESSMENT					





Conformity of answers

: 100%

The UAS assessment weight is 20% of 100% of the assessment for this course

**IMPLEMENTATION SCHEDULE** 

17th week
OTHERS REQUIRED:

60 minutes

# REFERENCES

Hunt, J. (2000). The Unified Process for Practitioners: Object-oriented Design, the UML and Java (Vol. 12). Springer Science & Business Media. Lee, M., Kim, H., Kim, J., Lee, J., & Gum, D. (2005). StarUML 5.0 user guide. 2009-03-11]. http://staruml, sourceforge, net/docs/user-guide (en)/toc. html.





### ASSESSMENT AND EVALUATION PLAN

### Web Design and Programming

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students can explain the concept of a working website and the concept of HTML (C2)</li> <li>Students distinguish static web and dynamic web (C2)</li> <li>Students can distinguish dynamic web on the server side and on the client side (C2)</li> <li>Students can apply HTML Concepts on Static Web (C3)</li> </ul>	<ul> <li>Web basic concept</li> <li>Great Web Design</li> <li>Web architecture</li> <li>HTTP</li> <li>Client side programming</li> <li>Server side programming</li> <li>Web server software</li> <li>Introduction to HTML</li> <li>Creating Images</li> <li>Create Links</li> <li>Heading / Title</li> <li>Make a List / List</li> <li>Understanding DIV Tags</li> <li>Forms</li> <li>Table</li> <li>Web Programming</li> <li>Case study</li> </ul>	<ul> <li>Practicum 1</li> <li>UAS ( 5 questions)</li> </ul>	Practicum 1: 2% Practicum 2: 2% Practicum 3: 2% Practicum 4: 2% Practicum 5: 2% Practicum 6: 2% Practicum 7: 2% Practicum 8: 2% UTS: 2 0%
2	<ul> <li>Students can explain the concept of CSS</li> <li>Students can (C2) apply CSS Concepts to Static Web (C3)</li> </ul>	<ul> <li>Definition of CSS</li> <li>Box Models</li> <li>Grids</li> <li>FlexBox</li> <li>Case study</li> </ul>	<ul> <li>Practice 2</li> <li>UAS (4 questions)</li> </ul>	
3	<ul> <li>Students can explain the concept of CSS (C2)</li> <li>Students can apply CSS Concepts to Static Web (C3)</li> </ul>	<ul> <li>Fonts</li> <li>Background Color</li> <li>Responsive Web</li> <li>Case study</li> </ul>	<ul><li>Practice 3</li><li>UAS (3 questions)</li></ul>	
4	<ul> <li>Students can explain the concept of Java Script (C2)</li> <li>Students can apply Java Script Concepts on Static Web (C3)</li> </ul>	<ul> <li>Introduction to Java Script</li> <li>Event Handling</li> <li>Strings object</li> <li>Window object</li> <li>Date and Time</li> <li>Variables</li> </ul>	<ul> <li>Practice 4</li> <li>UAS (3 questions)</li> </ul>	





6	<ul> <li>Students can explain the concept of Java Script (C2)</li> <li>Students can apply Java Script Concepts on Static Web (C3)</li> <li>Students can explain the concept of JQuery (C2)</li> <li>Students can apply JQuery Concepts on Static Web (C3)</li> </ul>	<ul> <li>Data Type</li> <li>table</li> <li>Arrays</li> <li>Looping</li> <li>Condition</li> <li>Form validation</li> <li>maps</li> <li>Jquery Usage and Development</li> <li>Jquery Basics</li> <li>Event Handling in Jquery</li> <li>Creating Slide Shows with Jquery</li> </ul>	<ul> <li>Practice 5</li> <li>UAS (3 questions)</li> <li>Practicum 6</li> <li>UAS (4 questions)</li> </ul>	
7	<ul> <li>Students can explain the concept of web-based programming (C2)</li> <li>Students can explain various types of Web server software (C2)</li> <li>Students can explain the concept of PHP (C2)</li> <li>Students can apply PHP Concepts on Dynamic Web (C3)</li> </ul>	<ul> <li>Introduction to Web Servers</li> <li>PHP Introduction</li> <li>PHP installation</li> <li>PHP variables</li> <li>PHP Data Types</li> <li>PHP strings</li> </ul>	<ul> <li>Practicum 7</li> <li>UAS (4 questions)</li> </ul>	
8	<ul> <li>Students can explain the concept of web-based programming (C2)</li> <li>Students can give examples of various Web server software (C2)</li> <li>Students can explain the concept of PHP (C2)</li> <li>Students can apply PHP Concepts on Dynamic Web (C3)</li> </ul>	<ul> <li>Looping and Branching Structures</li> </ul>	<ul> <li>Practicum 8</li> <li>UAS ( 3 questions)</li> </ul>	
9		UTS		
10	<ul> <li>Students can explain the concept of web-based programming (C2)</li> <li>Students can give examples of various Web server software (C2)</li> <li>Students can explain the concept of PHP (C2)</li> <li>Students can apply PHP Concepts on Dynamic Web (C3)</li> </ul>	<ul> <li>Arrays in PHP</li> <li>Functions in PHP</li> <li>Strings</li> <li>date and time</li> </ul>	<ul> <li>Practicum 9</li> <li>UAS (5 questions)</li> </ul>	Practicum 9: 2% Practicum 10: 2% Practicum 11: 2% Practicum 12: 2% Practicum 13: 2% Practicum 13: 2% Final Projects: 22%





				UAS: 30%	
11	<ul> <li>Students can explain the concepts of Form Processing and Form Upload (C2)</li> <li>Students can apply the Concept of Form Processing and Form Upload on Dynamic Web (C3)</li> </ul>	<ul> <li>Basic Form Handling</li> <li>Form Input type text and Password</li> <li>Form Validation with isset() function and header redirect</li> <li>Form Input type Radio</li> <li>Form Input Checkbox</li> <li>Form Input ComboBox</li> <li>Form Validation using Regular Expression</li> <li>Form Input type Text Area Move upload file</li> <li>Validation for Uploaded files that have the same name</li> <li>Limit Upload File Size</li> <li>Limit Upload File Types</li> </ul>	<ul> <li>Practicum 10</li> <li>UAS (4 questions)</li> </ul>		
12	<ul> <li>Students can explain the concept of Login, Multiuser Login and reports (C2)</li> <li>Students can apply the Concept of Login, Multiuser Login and reports on Dynamic Web (C3)</li> <li>Students can explain the concept of Cookies, Session and Mysql (C2)</li> <li>Students can apply the Concept of Cookies, sessions and Mysql on Dynamic Web (C3)</li> </ul>	<ul> <li>create</li> <li>Updates</li> <li>Delete</li> <li>Database Connection</li> </ul>	<ul> <li>Practicum 11</li> <li>UAS (4 questions)</li> </ul>		
13	<ul> <li>Students can explain the concept of Login, Multiuser Login and reports (C2)</li> <li>Students can apply the Concept of Login, Multiuser Login and reports on Dynamic Web (C3)</li> <li>Students can explain the concept of Cookies, Session and Mysql (C2)</li> </ul>	<ul> <li>Login</li> <li>Multiuser Login</li> <li>Report</li> <li>Sessions</li> <li>Cookies</li> <li>mysql</li> </ul>	<ul> <li>Practicum 12</li> <li>UAS (3 questions)</li> </ul>		





	• Students can apply the Concept of Cookies, sessions and Mysql on Dynamic Web (C3)			
14	<ul> <li>Students can explain the concept of Bootstrap (C2)</li> <li>Students can apply the Bootstrap Concept to Dynamic Web (C3)</li> </ul>	Bootstrap	<ul> <li>Practicum 13</li> <li>UAS ( 3 questions)</li> </ul>	
15	<ul> <li>Students can explain the concept of Web Hosting (C2)</li> <li>Students can apply Web Hosting Concepts to Dynamic Web (C3)</li> </ul>	Web Hosting	<ul> <li>Practicum 14</li> <li>UAS (2 questions)</li> </ul>	
16	<ul> <li>Students can explain the concept of Web design and Programming (C2)</li> <li>Students can apply Web Design and Programming Concepts to Dynamic Web (C3)</li> </ul>	FinalProject	• FinalProject	
17	``````````````````````````````````````	UAS	•	1
	•	TOTAL WEIGHT		100%





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())	<b>STUDY PROGRAM: D4 IN</b>	FORMATICS ENGINEERING				
		ASSESSMENT METHOD				
SUBJE	Web Design and Programming	9				
CODE	RTI203004	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER 3		
SUPPORTING LECTURER	Elok Nurhamdana, ST, MT					
	Annisa Taufika Firdausi, ST.,	MT.				
	Milyun Ni'ma Shoumi, S.Kom	n., M.Kom				
	Farid Angga Pribadi, S.Kom.,	M.Kom				
	Rizky Ardiansyah, S. Kom., N	ИТ.				
	Wilda Imama Sabilla, S.Kom.	, M.Kom				
ASSESSMENT FORMS						
Practice						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students can explain the concept of a wo	rking website and the concept o	f HTML (C2)				
Students distinguish static web and dynamic	mic web (C2)					
Students can distinguish dynamic web or	the server side and on the clien	nt side (C2)				
Students can apply HTML Concepts on S	Static Web (C3)					
Students can explain the concept of CSS						
Students can (C2) apply CSS Concepts to	Static Web (C3)					
Students can explain the concept of CSS	(C2)					
Students can apply CSS Concepts to Stat	1c Web (C3)					
Students can explain the concept of Java	Script (C2)					
Students can apply Java Script Concepts	on Static Web (C3)					
Students can explain the concept of Java	Script (C2)					
Students can apply Java Script Concepts	on Static Web (C3)					
Students can explain the concept of JQue	$\frac{1}{2} \frac{1}{2} \frac{1}$					
Students can apply JQuery Concepts on S	Static web $(C3)$					
Students can explain the concept of web-	based programming (C2)					
Students can explain various types of we	(C2)					
Students can explain the concept of PHP Students can apply DHD Concepts on Dw	(C2)					
Students can apply i ill Concepts of Dy.	based programming $(C2)$					
Students can give examples of various W	Vab server software (C2)					
Students can explain the concept of DUD	(C2)					
Students can explain the concept of PHP Students can apply PHP Concepts on Dr	$(C_2)$					
Students can apply PTP Concepts on Dy	tudents can apply PHP Concepts on Dynamic Web (C3)					





#### DESCRIPTION

A company asks its employees to create a web page consisting of several pages or hyperlinks, start page: home, second page: your uniquely designed bio, third page: restaurant profile, fourth page: Price rules for purchasing members and non members customers.

Input on page 4 of the website

Customize the creation of the name of your place to eat (admin/cashier page)

Buyer ID: (in a combination of numbers and letters)

buyer name: (string)

Buyer status: member or non-member (radio button is displayed, must be filled in)

the name of the type of food: (shown as a dropdown form) and there is a loop if you buy more than 1 type of food, for example 1. pizza and 2. burgers and so on order quantity: (in numbers)

Rules on page 4 of the website

- If the status of the buyer is a member, then the food he ordered is the price normally 1 portion or more is given a 5% discount. If you order 2 to 3 servings given a 7% discount per portion. Furthermore, if you order more than 3 portions, a 10 percent discount is given for each portion
- If the buyer's status is non-member, then if he orders 1 to 3 portions the normal price is no discount, and if he orders from 3 to 5 portions then the total price normally given a discount of 5% of the total price. Furthermore, if you order more than 5 portions, a 5% discount is given from the normal price per portion.

#### WORKING METHOD

Implement case studies by utilizing HTML, CSS, Javascript, JQuery, and PHP. Questions can be downloaded and answers can be uploaded at Imsslc.polinema.ac.id E-learning

#### **OUTER FORMAT**

Work Object: UTS

Outer Shape:

Page 1: Home (attractive design with slide show)

Page 2: biodata (attractive design)

Page 3:Profile of places to eat complete with google maps

Page 4. order and print name, order name and total payment.

No	Sub-CP-MK	Assessment criteria	Maxscore	Score 0-Max
1	- Students understand the concept of a working	Page 1:Home (attractive design)		
	<ul> <li>website</li> <li>Students know the difference between static web</li> <li>and dynamic web</li> </ul>	Displays a choice of links 4 full menu accessible all with a slide show of images	20	20
	- Students can distinguish dynamic web on the server side and on the client side	Displays a choice of links 4 menus that can be accessed 3 menus with a slide show of images	15	
	- Students understand the concept of H1ML	Displays a choice of links 4 menus that can be accessed 2 menus with a slide show of images	10	





	<ul> <li>Students know how to apply HTML Concepts to Static Web</li> </ul>	Displays link options 4 menus that can be accessed 1 menu without a slide show	5	
		Unable to display menu and no slide show or custom design.	0	
2 -	Students are able to understand CSS for web layout	Page 2: biodata (attractive design)		
-	design Understand the core concepts of CSS on the web	Displays a design with image component tones, text, color, background, border and uses css styles	15	15
		Displays a design with image component tones, text, color, background, border and does not use css styles	10	
		Unable to display biodata and no css styles	0	
	- Students understand advanced concepts of CSS on	Page 3:Complete restaurant profiles		
	<ul> <li>the web</li> <li>Students are able to apply CSS Concepts to Static Web</li> </ul>	Displays a complete profile and there is a google maps location where to eat	25	25
_	- Students can understand the concept of Javascript Understand data types, operators and functions in	Displays an incomplete profile and there is a google maps location where to eat	20	
_	javascript Students are able to run javascript in HTML files	Displaying a very incomplete profile and there are google maps for the location of where to eat	15	
-	Understand the DOM concept in Javascript Students are able to display maps in Google Map	Displaying a very incomplete profile and there is no Google Maps location where to eat	10	
		No profile showing and no location with google maps.	0	
· –	Students are able to understand the basic concepts of	Page 4. order and print name, order name and total paym	ient.	
-	jQuery Understand the basic concepts of AJAX Implements jQuery and jQuery AJAX	Displays the website according to the rules on page 4 of the website and there is output according to data processing with branching and looping	40	40
-	Students understand the basic concept of a web server understand the concept of php (variables, data types, operators)	Displaying the website does not comply with the rules on page 4 of the website and there is output that does not match data processing with branching and looping	20	
-	Students understand the concept of php (branching and looping)	Does not display according to the rules and is not in accordance with branching and looping processing	10	
-	Implementing php concepts into dynamic web	Cannot display anything.	0	
	Total		10	0





The weight for Quiz 1 is 20 % of 100% f	for this course					_
Oth week			315 minut	·····		-
OTHERS REOUIRED:			515 mild			
REFERENCES						
<ol> <li>Jason Beaird, The principles of Beautiful Web Design</li> <li>Rian Ariona, Learn HTML and CSS (Fundamental Tutorial on learning HTML and CSS)</li> <li>Adi Hadisaputra, HTML and CSS Fundamentals from Roots to Leaves</li> <li>John Duckett, HTML and CSS design and build websites</li> <li>Glenn Johnson, Programming in HTML 5 with Javascript and CSS 3</li> <li>Desrizal, Javascript Guide</li> <li>Tutorials Point Simply Easy Learning, Java Script Language</li> <li>Jonathan Caffer and Karl Swedberg, Learning Jquery 1.3 (Better Interaction Design and Web development with simple Jawa Script Techniques)</li> <li>Andre Pratama, PHP Uncover – PHP Learning Guide for beginners</li> <li>Endy Muhardin, PHP Programming Fundamentals and MySql Fundamentals</li> <li>Sootstrap Tutorial (Simply Easy Learning by Tutorials.com) Desrizal, Complete guide to PHP AJAX JQuery</li> <li>Ciebal, Basic Internet Tutorial for beginners</li> <li>ABD Hama, Indonesian Language Bootstrap Framework Tutorial</li> </ol>						
LENNIK NEGERI AR	MALANG STATE POLYTE INFORMATION TECHNO	ECHNIC LOGY DEPARTMENT				
	STUDY PROGRAM: D4 IN	FORMATICS ENGINEERING				_
SUBJECT SUBJECT	Web Design and Programming	ASSESSMENT METHOD				_
CODE	RTI203004	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	3	
SUPPORTING LECTURER	Elok Nurhamdana, ST, MT Annisa Taufika Firdausi, ST., Milyun Ni'ma Shoumi, S.Kom Farid Angga Pribadi, S.Kom., Rizky Ardiansyah, S. Kom., N Wilda Imama Sabilla, S.Kom.	MT. ., M.Kom M.Kom IT. . M.Kom				
ASSESSMENT FORMS						
Online test						
ASSESSMENT TITLE						
UAS						





#### SUB COURSE LEARNING ACHIEVEMENTS

Students can explain the concept of a working website and the concept of HTML (C2) Students distinguish static web and dynamic web (C2) Students can distinguish dynamic web on the server side and on the client side (C2) Students can apply HTML Concepts on Static Web (C3) Students can explain the concept of CSS Students can (C2) apply CSS Concepts to Static Web (C3) Students can explain the concept of CSS (C2) Students can apply CSS Concepts to Static Web (C3) Students can explain the concept of Java Script (C2) Students can apply Java Script Concepts on Static Web (C3) Students can explain the concept of Java Script (C2) Students can apply Java Script Concepts on Static Web (C3) Students can explain the concept of JOuery (C2) Students can apply JQuery Concepts on Static Web (C3) Students can explain the concept of web-based programming (C2) Students can explain various types of Web server software (C2) Students can explain the concept of PHP (C2) Students can apply PHP Concepts on Dynamic Web (C3) Students can explain the concept of web-based programming (C2) Students can give examples of various Web server software (C2) Students can explain the concept of PHP (C2) Students can apply PHP Concepts on Dynamic Web (C3) Students can explain the concept of web-based programming (C2) Students can give examples of various Web server software (C2) Students can explain the concept of PHP (C2) Students can apply PHP Concepts on Dynamic Web (C3) Students can explain the concepts of Form Processing and Form Upload (C2) Students can apply the Concept of Form Processing and Form Upload on Dynamic Web (C3) Students can explain the concept of Web Database Programming using PHP and MySql (C2) Students can apply Web Database Programming Concepts using PHP and MySql on Dynamic Web (C3) Students can explain the concept of Login, Multiuser Login and reports (C2) Students can apply the Concept of Login, Multiuser Login and reports on Dynamic Web (C3) Students can explain the concept of Cookies, Session and Mysql (C2) Students can apply the Concept of Cookies, sessions and Mysql on Dynamic Web (C3) Students can explain the concept of Bootstrap (C2) Students can apply the Bootstrap Concept to Dynamic Web (C3) Students can explain the concept of Web Hosting (C2) Students can apply Web Hosting Concepts to Dynamic Web (C3)





DESCRIPTION					
Answer U AS questions from meeting materials 1-16					
WORKING METHOD					
The questions are done through e-learning lmsslc .polinema.ac.id					
OUTER FORMAT					
Job Object: U US					
Outcome: U AS student's answer					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers: 10 0 %					
UAS assessment weight is 30 % of 100% of the assessment of this course					
IMPLEMENTATION SCHEDULE					
Week 17 315 minutes					
OTHERS REQUIRED:					
REFERENCES					
1. Jason Beaird, The principles of Beautiful Web Design					
2. Rian Ariona, Learn HTML and CSS (Fundamental Tutorial on learning HTML and CSS)					
3. Adi Hadisaputra, HTML and CSS Fundamentals from Roots to Leaves					
4. John Duckett, HTML and CSS design and build websites					
5. Glenn Johnson, Programming in HTML 5 with Javascript and CSS 3					
6. Desrizal, Javascript Guide					
<ul> <li>Intornals Point Simply Easy Learning, Java Script Language</li> <li>Longthen Coffee and Keel See them. Learning Learning Learning Learning Learning Design and Web development with simple Learning Learning.</li> </ul>					
5. Jonainan Carrer and Karr Swedberg, Learning Jquery 1.5 (Beller Interaction Design and Web development with simple Jawa Script Techniques)					
<ul> <li>Andre Fratama, FHF Uncover – FHF Learning Guide for beginners</li> <li>Endy Muhardin PHP Programming Fundamentals and MySal Fundamentals</li> </ul>					
10. Endy Muhardin, PHP Programming Fundamentals and MySql Fundamentals 11. Repetetran Tutorial (Simply Fasy Learning by Tutorials com) Desrizal Complete guide to PHP ATAX JOUERY					
11. Bootstrap Lutorial (Simply Easy Learning by Lutorials.com) Desrizal, Complete guide to PHP AJAX JQuery					
4 ΔRD Hama Indonesian Language Bootstran Framework Tutorial					

### ASSESSMENT AND EVALUATION PLAN

#### **Business Intelligence**

Week	Sub-CP-MK	Subject	Assessment form	Weight





1	Understand the basic concept of data warehouse and the underlying business needs and analysis.	<ul> <li>Data warehouse concept.</li> <li>The difference between a data warehouse and a database in general.</li> <li>Business requirements and data sources in the data warehouse.</li> <li>Examples of data warehouse implementation in various fields.</li> </ul>	<ul> <li>Group discussion on business needs analysis and data sources in a journal/proceeding article related to data warehouse</li> <li>Quiz 1 (5 questions)</li> <li>UTS (2 questions)</li> <li>UAS (2 questions)</li> </ul>	Group discussion 1: 2.5% Group discussion 2: 2.5% Group discussion 3: 2.5% Task 1: 2.5% Task 2: 2.5% Task 3: 2.5% Quiz 1: 10% UTS: 25%
2	Understand each component used to build a data warehouse architecture.	<ul> <li>Data store in data warehouse (Stage, DDS, NDS, ODS).</li> <li>Data flow in data warehouse architecture (Single DDS, NDS+DDS, ODS+DDS).</li> <li>The topology of the data warehouse architecture.</li> <li>The difference between OLTP and OLAP.</li> </ul>	<ul> <li>The group discussion identified the architecture and data flow of the data warehouse built on the selected journal/proceeding articles</li> <li>Quiz 1 (5 questions)</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
3	Understand the functional and non-functional requirements of the data warehouse and the concept of data warehouse development.	<ul> <li>Functional and non-functional requirements related to data warehouse development.</li> <li>Data warehouse development methodology (iterative and waterfall).</li> </ul>	<ul> <li>The group discussion identified the non-functional requirements of the data warehouse built on the selected journal/proceeding articles</li> <li>Quiz 1 (5 questions)</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
4		Quiz 1		
5	Understand the concept of data modeling on Dimensional Data Store (DDS).	<ul> <li>Introduction to the concepts of dimensions, facts and schemas in data stores.</li> <li>Identification of grains based on analysis needs from the data warehouse.</li> <li>Identification of dimension tables and facts based on the analysis needs of the data warehouse.</li> <li>Dimensional model design.</li> </ul>	<ul> <li>Build a dimensional model based on the ERD of a relational database</li> <li>Build a dimensional model based on data obtained from several business processes</li> <li>UTS (2 questions)</li> <li>UAS (2 questions)</li> </ul>	





6	Understand the concept of data modeling in Normalized Data Store (NDS) and Operational Data Store (ODS).	<ul> <li>Normalization of data from multiple data sources.</li> <li>The process of updating data in data stores with historical and transactional data types.</li> </ul>	<ul> <li>Normalize data from various data sources</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
7	Implement the logical concepts from each data store to a physical database on SQL Server.	<ul> <li>Introduction of the platform to be used (SQL Server).</li> <li>Database configuration.</li> <li>Implementation of DDS, NDS and ODS on SQL Server.</li> <li>View, Summary Table, Partition and Index.</li> </ul>	<ul> <li>Implement the data model from each data store to the physical database.</li> <li>Create views, partitions and indexes of a table</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
8		UTS		
9	Understand and implement the concept of data extraction from data sources in the form of file systems.	<ul> <li>The concept of ETL in SQL Server uses the SSIS package.</li> <li>File systems supported by SQL Server.</li> <li>Extraction process from several file systems at once.</li> </ul>	<ul> <li>Implementing the extraction process from several data sources in the form of a file system.</li> <li>Quiz 2 (3 questions)</li> <li>UAS (3 questions)</li> </ul>	Task 4: 2.5% Task 5: 2.5% Task 6: 2.5% Task 7: 2.5% Task 8: 2.5% Task 9: 2.5%
10	Understand and implement the concept of data extraction from data sources in the form of relational databases.	<ul> <li>The process of extracting data from a relational database.</li> <li>The process of extracting data from one or more relational databases.</li> <li>The process of extracting data from several relational databases and file systems.</li> </ul>	<ul> <li>Implementing the extraction process from several data sources in the form of a relational database</li> <li>Quiz 2 (3 questions)</li> <li>UAS (4 questions)</li> </ul>	Task 10: 3.5% Quiz 2: 10% UAS: 25%
11	Understand and implement the concept of transformation (normalization) and load data on stage, NDS and ODS.	<ul> <li>The concept of using stages.</li> <li>Using the SSIS package in the process of loading data to NDS/ODS.</li> <li>Normalization.</li> <li>Use of lookup tables.</li> </ul>	<ul> <li>Implementing data staging process to load data into NDS/ODS in stages.</li> <li>UAS (3 questions)</li> </ul>	





12	Understand and implement the concept of loading data on DDS.	<ul> <li>Using the SSIS package in the process of loading data to DDS.</li> <li>The concept of batches, mini batches.</li> </ul>	<ul> <li>Implement the process of loading data into DDS.</li> <li>UAS (3 questions)</li> </ul>	
13	Understand and implement data quality assurance concepts.	<ul> <li>Process in data quality assurance.</li> <li>Data cleansing and matching.</li> <li>Data quality rules, notifications and reporting.</li> </ul>	<ul> <li>Implement data cleansing and matching processes</li> <li>Send notifications and generate reports from the results of data quality assurance</li> <li>UAS (3 questions)</li> </ul>	
14		Quiz 2		
15	Understand and implement control concepts, audit reporting concepts for each process in the data warehouse	<ul> <li>The concept of metadata in the data warehouse.</li> <li>Data definitions and mappings.</li> <li>Metadata for structure, ETL processes, quality assurance, auditing and use of the Reporting concept in SQL Server uses the SSRS package.</li> <li>Grouping, Sorting and Filtering.</li> </ul>	<ul> <li>Create a control and audit system to oversee the ETL process</li> <li>UAS (3 questions)</li> </ul>	
16	Understand and implement the concept of multidimensional database.	<ul> <li>Multidimensional database concept.</li> <li>OLAP.</li> <li>Queries on multidimensional databases.</li> </ul>	<ul> <li>Create simple reporting using the SSRS package</li> <li>UAS (3 questions)</li> </ul>	
17		UAS		
		TOTAL WEIGHT		100%



#### MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING





ASSESSMENT METHOD					
SUBJECT	Business Intelligenc		2 1: / ( 1	CD CCTDD	
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6
SUPPORTING					
LECTURER					
ASSESSMENT FORMS					
Quiz 1					
ASSESSMENT TITLE					
Quiz material 1-3					
SUB COURSE LEARNING A	CHIEVEMENTS				
Understand the basic concept of	data warehouse and t	he underlying business needs a	and analysis.		
Understand each component use	d to build a data ware	chouse architecture.			
Students can understand the fund	ctional and non-funct	ional requirements of a data wa	arehouse, as well as the co	ncept of developing a data	warehouse
DESCRIPTION					
3. Answer Quiz questions relat	ed to material 1 to 3				
WORKING METHOD					
• The questions are don	e through e-learning l	ms.polinema.ac.id			
• Quiz done in 60 minut	es				
OUTER FORMAT					
Job Object: Quiz					
Outcome Form: student	Quiz answers				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
Quiz 1 assessment weight is 10% of 100% assessment of this course					
IMPLEMENTATION SCHEDULE					
4th week 60 minutes					
OTHERS REQUIRED:					
REFERENCES					





- Rainardi, Vincent. 2007. Building a Data Warehouse with Examples in SQL Server. Berkeley: Apress. E-books.
- Sarka, Dejan, et al. 2012. Implementing a Data Warehouse with Microsoft SQL Server 2012: Training Kit (Exam 70-463). MicrosoftPress.

MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT							
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
ASSESSMENT METHOD							
SUBJEC	Business Intelligence						
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6		




SUPPORTING				
LECTURER				
ASSESSMENT FORMS				
Quiz 2				
ASSESSMENT TITLE				
Quiz material 9-13				
SUB COURSE LEARNING A	ACHIEVEMENTS			
Students can understand and imp	plement the concept of data extraction from file system data s	Durces		
Students can understand and imp	plement the concept of data extraction from relational databas	e data sources		
Students can understand and imp	plement the concept of transformation and load data on stage,	NDS, and ODS		
Students can understand and imp	plement the concept of loading data on DDS			
Students can understand and imp	plement the concept of data quality assurance			
DESCRIPTION				
Answer Quiz questions related to	to material 9-10			
WORKING METHOD				
• The questions are done	e through e-learning lms.polinema.ac.id			
• Quiz done in 60 minute	es			
OUTER FORMAT				
C. Job Object: Quiz				
D. Outcome Form: student Quiz	iz answers			
INDICATORS, CRITERIA A	AND WEIGHT ASSESSMENT			
Conformity of answers	: 100%			
Quiz 2 assessment weight is 10%	% of 100% assessment of this course			
IMPLEMENTATION SCHED	DULE			
14th week		60 minutes		
<b>OTHERS REQUIRED:</b>				
REFERENCES				
1. Rainardi, Vincent. 2007	17. Building a Data Warehouse with Examples in SQL Server.	Berkeley: Apress. E-books.		
2. Sarka, Dejan, et al. 2012. Implementing a Data Warehouse with Microsoft SQL Server 2012: Training Kit (Exam 70-463). MicrosoftPress.				









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HNIK NE GERI	INFORMATION '	FECHNOLOGY DEPARTM	ENT			
and the second s	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING			
	ASSESSMENT METHOD					
SUBJEC	Business Intelligence	e				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Midterm exam						
ASSESSMENT TITLE						
UTS material 1-7						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand each component use	d to build a data ware	ehouse architecture, and descri	be the ETL process			
Understand each component use	d to build a data ware	ehouse architecture				
Students can understand the fund	ctional and non-funct	ional requirements of a data wa	arehouse, as well as the co	oncept of developing a dat	ta warehouse	
Students can understand the cond	cept of data modeling	g on dimensional data stores (E	DDS)			
Students can understand the cone	cept of data modeling	g on normalized data stores (NI	DS) and operational data s	stores (ODS)		
Students can implement logical o	concepts from each d	ata store to a physical database	e on SQL Server			
DESCRIPTION	117					
Answer UTS questions related to	o material 1-/					
WORKING METHOD						
• The questions are done	through e-learning lr	ns.polinema.ac.id				
• UTS is done in 60 minu	ites					
OUTER FORMAT						
• Work Object: UTS						
• Outcome Form: UTS st	udent answers					
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT				
Conformity of answers	: 100%	)				
The LITE account weight in 2	50/af1000/af4	account for this cours-				
The UTS assessment weight is 2	5% of 100% of the a	ssessment for this course				
INFLEMENTATION SCHED	JULE		<u> </u>			
8th week			60 minutes			
OTHERS REQUIRED:						





# REFERENCES

- Rainardi, Vincent. 2007. Building a Data Warehouse with Examples in SQL Server. Berkeley: Apress. E-books.
- Sarka, Dejan, et al. 2012. Implementing a Data Warehouse with Microsoft SQL Server 2012: Training Kit (Exam 70-463). MicrosoftPress.





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sterner age	INFORMATION I	LECHNOLOGY DEPARIM	EN I CINEEDINC			
	STUDY PROGRAM ; D4 INFORMATICS ENGINEERING					
		ASSI	LSSMENT METHOD			
SUBJEC	Business Intelligence	e				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Final exams						
ASSESSMENT TITLE						
UAS material 1-17						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand each component use	d to build a data ware	chouse architecture, and describ	be the ETL process			
Understand each component use	d to build a data ware	chouse architecture				
Students can understand the fund	ctional and non-funct	ional requirements of a data wa	arehouse, as well as the co	oncept of developing a data v	warehouse	
Students can understand the con-	cept of data modeling	g on dimensional data stores (D	DDS)			
Students can understand the con-	cept of data modeling	g on normalized data stores (NI	OS) and operational data s	stores (ODS)		
Students can implement logical of	concepts from each d	ata store to a physical database	on SQL Server			
Students can understand and imp	plement the concept o	f data extraction from file system	em data sources			
Students can understand and imp	plement the concept o	of data extraction from relationation	al database data sources			
Students can understand and imp	plement the concept o	f transformation and load data	on stage, NDS, and ODS			
Students can understand and imp	plement the concept of	f loading data on DDS				
Students can understand and imp	plement the concept of	f data quality assurance				
Students can understand and imp	plement control and a	udit concepts for each data wai	rehouse process			
Students can understand and imp	olement the concept of	t reporting				
DESCRIPTION			··· · · · ·	• • •		
Students build a data warehouse	architecture, practice	ETL concepts and control, au	dit, and report each proces	ss in the data warehouse		
WORKING METHOD						
• The questions are done	The questions are done through e-learning lms.polinema.ac.id					
UAS was done within 1	UAS was done within 1 week					
OUTER FORMAT						
<ul> <li>Work Object: UAS</li> </ul>						
Outcome Form: 15 min	ute student report pre	esentation				





INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers : 100%	
The UAS assessment weight is 20% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
17th week	15 minutes
OTHERS REQUIRED:	
REFERENCES	
1. Rainardi, Vincent. 2007. Building a Data Warehouse with Examples in SQL Server	. Berkeley: Apress. E-books.
2. Sarka, Dejan, et al. 2012. Implementing a Data Warehouse with Microsoft SQL Ser	ver 2012: Training Kit (Exam 70-463). MicrosoftPress.





# ASSESSMENT AND EVALUATION PLAN

## **Advanced Database**

Week	Sub-CP-MK	Subject	Assessment form	Weight
Week           1           2	<ul> <li>Sub-CP-MK</li> <li>Students are able to install Microsoft SQL Server,</li> <li>Management Studio (SSMS) and connect it with SQL Server (C1)</li> <li>Students explain the intent and purpose of SQL Server services on Windows. (C2)</li> <li>Students explain the concept of database objects in SQL Server through the SSMS window. (C2)</li> <li>Students explain the difference between database servers and database tools (GUI). (C2)</li> <li>Students are able to execute Transact-SQL (T-SQL) scripts via SSMS. (C3)</li> <li>Students are able to explain the basic differences between Transact-SQL (T-SQL) and ANSI SQL. (C2)</li> <li>Students are able to explain how to create a database from an existing SQL file (C2)</li> <li>Students can execute part or all of the SQL script from an existing file. (C3)</li> <li>Students are able to explain and apply the concept of 'database context' and how to adjust it. (C2) (C3)</li> <li>Students are able to apply the concept of using 'comments' in T-SQL. (C3)</li> </ul>	<ul> <li>Subject</li> <li>Install Microsoft SQL Server.</li> <li>Install Microsoft SQL Server Management Studio.</li> <li>Exploring SQL Server services and enabling/disabling them through SQL Server Configuration Manager.</li> <li>Connect to the database server via SSMS.</li> <li>Exploring database objects through the SSMS window.</li> <li>Execute SQL scripts via the SSMS query window.</li> <li>Executes SQL scripts that have been previously stored in a file</li> <li>Observe and change the database context.</li> <li>Make comments (comments) on T-SQL</li> <li>Analyze a table with the help of a SELECT statement.</li> <li>Display data uniquely with DISTINCT.</li> <li>Create aliases for table names and column names</li> <li>Create a branch with CASE.</li> </ul>	Assessment form  Job sheet 1 UTS (1 question) UAS (2 questions)  Job sheets 2 UTS (1 question) UAS (2 questions)	Weight           Jobsheet 1: 2.86%           Jobsheet 2: 2.86%           Jobsheet 3: 2.86%           Jobsheet 5: 2.86%           Jobsheet 6: 2.86%           Jobsheet 7: 2.86%           UTS: 25%
	<ul> <li>using a SELECT statement to analyze existing tables in the database. (C3)</li> <li>Students are able to apply how to display data uniquely/distinctly. (C3)</li> <li>Students are able to apply how to use aliases for table names and column names. (C3)</li> </ul>			





	• Students are able to apply the concept of CASE expressions and how to use them. (C3)			
3	<ul> <li>Students are able to explain and apply how to query multi-tables in the SELECT clause using JOIN (C2)(C3)</li> <li>Students are able to apply how to write INNER JOIN queries (C3)</li> <li>Students are able to apply how to write OUTER JOIN queries (C3)</li> <li>Students are able to apply how to write SELF-JOIN and CROSS JOIN queries (C3)</li> <li>Students are able to apply how to do Data Sorting (C3)</li> <li>Students are able to apply how to do Data Filtering with a predicate (C3)</li> <li>Students are able to explain and apply how to do Data Filtering with a predicate (C3)</li> <li>Students are able to explain and apply how to do Data Filtering with a predicate (C3)</li> <li>Students are able to explain and apply how to do Data Filtering with a predicate (C3)</li> <li>Students are able to explain and apply how to do Data Filtering with a predicate (C3)</li> </ul>	<ul> <li>Multi-table query with JOIN</li> <li>INNER JOIN</li> <li>OUTER JOINS</li> <li>SELF JOIN and CROSS JOIN</li> <li>Sorting (sorting) data</li> <li>Filter data with WHERE</li> <li>Partial data retrieval with TOP and OFFSET-FETCH</li> <li>NULL and its handling</li> </ul>	<ul> <li>Job sheets 3</li> <li>UTS (1 question)</li> <li>UAS (3 questions)</li> </ul>	
4	<ul> <li>Students can explain data types in SQL Server (C2)</li> <li>Students can explain queries against data types Date &amp; Time (C2)</li> <li>Students can explain built-in functions related to Date &amp; Time (C2)</li> <li>Students can explain character data types Concatenation of character data types with non-characters (C2)</li> <li>Students can explain built-in functions related to character data types (C5)</li> </ul>	<ul> <li>Convert data types with CAST and CONVERT</li> <li>Replace NULL with ISNULL and COALESCE</li> <li>Convert date-time data type with CONVERT &amp; TRYPARSE</li> <li>IF logic function</li> <li>Row grouping with CHOOSE.</li> <li>The LEN function on strings</li> </ul>	<ul> <li>Job sheets 4</li> <li>UTS (1 question)</li> <li>UAS (3 questions)</li> </ul>	
5	• Students can explain how to write queries that summarize data using the built-in aggregation function (C2)	<ul> <li>Convert data types with CAST and CONVERT</li> <li>Replace NULL with ISNULL and COALESCE</li> </ul>	<ul> <li>Job sheets 5</li> <li>UTS (1 question)</li> <li>UAS (3 questions)</li> </ul>	





		~		
	<ul> <li>Students can explain and apply how to use the GROUP BY clause to arrange rows into several groups (C2)(C3)</li> <li>Students can explain and apply how to use the HAVING clause to filter data according to search conditions (C2) (C3)</li> <li>Students are able to implement the intent and use of nested queries in other queries (C3)</li> <li>Students explain how to write a self-contained sub-query that returns scalar or multi-valued results (C2)</li> <li>Students are able to apply how to write correlated sub-queries and return scalar or multi-valued results (C3)</li> <li>Students are able to apply how to use the EXISTS predicate to efficiently check the existence of a row in a sub-query (C3)</li> </ul>	<ul> <li>Convert date-time data type with CONVERT &amp; TRYPARSE</li> <li>IF logic function</li> <li>Row grouping with CHOOSE.</li> <li>The LEN function on strings</li> </ul>		
6	<ul> <li>Students are able to explain the purpose of Set Operations (C2)</li> <li>Students are able to apply and explain the differences between UNION &amp; UNION ALL (C2)(C3)</li> <li>Students are able to apply and explain the differences between CROSS APPLY &amp; OUTER APPLY (C3)(C2)</li> <li>Students are able to apply, and explain the differences EXCEPT &amp; INTERSECT (C2)(C3)</li> <li>Students explain the meaning of TRIGGER (C2)</li> <li>Students are able to apply and activate TRIGGER AFTER &amp; TRIGGER INSTEAD OF (C2)</li> <li>Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE &amp; DELETE) (C3)</li> </ul>	<ul> <li>Convert data types with CAST and CONVERT</li> <li>Replace NULL with ISNULL and COALESCE</li> <li>Convert date-time data type with CONVERT &amp; TRYPARSE</li> <li>IF logic function</li> <li>Row grouping with CHOOSE.</li> <li>The LEN function on strings</li> </ul>	<ul> <li>Job sheets 6</li> <li>UTS (1 question)</li> <li>UAS (3 questions)</li> </ul>	





7	<ul> <li>Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, &amp; DELETE) (C3)</li> <li>Students are able to explain the purpose of Set Operations (C2)</li> <li>Students are able to apply and explain the differences between UNION &amp; UNION ALL (C2)(C3)</li> <li>Students are able to apply and explain the differences between CROSS APPLY &amp; OUTER APPLY (C3)(C2)</li> <li>Students are able to apply, and explain the differences EXCEPT &amp; INTERSECT (C2)(C3)</li> <li>Students explain the meaning of TRIGGER (C2)</li> <li>Students are able to apply and activate TRIGGER AFTER &amp; TRIGGER INSTEAD OF (C2)</li> <li>Students are able to apply and activate TRIGGER INSTEAD OF (C2)</li> <li>Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, &amp; DELETE) (C3)</li> </ul>	<ul> <li>Types of Set Operations</li> <li>Merge data with UNION &amp; UNION ALL</li> <li>Apply a function to each member of the set with CROSS APPLY &amp; OUTER APPLY</li> <li>Data slices with EXCEPT &amp; INTERSECT</li> <li>TRIGGER and its types</li> <li>Create and Execute TRIGGER</li> <li>TRIGGER AFTER</li> <li>TRIGGER INSTEAD OF</li> </ul>	<ul> <li>Job sheets 7</li> <li>UTS (1 question)</li> <li>UAS (3 questions)</li> </ul>	
8	UPDATE, & DELETE) (C3)	UTS		
9	<ul> <li>Students are able to explain the purpose and benefits of SQL Windowing (C2)</li> <li>Students are able to create windows with OVER clauses (C3)</li> <li>Students are able to partition windows (C3)</li> <li>Students are able to place orders on the window (C3)</li> <li>Students are able to do framing on windows (C3)</li> <li>Students are able to explain the concept of window function. (C2)</li> </ul>	<ul> <li>Understanding SQL Windowing</li> <li>Create a window with OVER</li> <li>Window partition with PARTITION BY</li> <li>Ordering window with ORDER BY</li> <li>Framing windows with ROWS BETWEEN</li> <li>Aggregation function on window</li> <li>Window ranking function</li> <li>Offset function on windows</li> </ul>	<ul><li>Job sheet 8</li><li>UAS (3 questions)</li></ul>	Jobsheet 8: 2.86% Jobsheet 9: 2.86% Jobsheet 10: 2.86% Jobsheet 11: 2.86% Jobsheet 12: 2.86% Jobsheet 13: 2.86% Jobsheet 14: 2.86% Jobsheet 15: 2.86% UAS: 35%





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	<ul> <li>Students are able to explain and be able to use the aggregation function in window (C2)(C3)</li> <li>Students are able to explain and be able to use the ranking function in window (C2)(C3)</li> <li>Students are able to explain and be able to use the offset function in window (C2)(C3)</li> <li>Students are able to define the meaning of the distribution function on the window. (C2)</li> </ul>	<ul> <li>Introduction to distribution functions in windows</li> </ul>		
10	<ul> <li>Students are able to present data in pivot form using the PIVOT operator (C3)</li> <li>Students are able to change the data format from pivot to normal form with UNPIVOT. (C3)</li> <li>Students are able to combine 2 or more GROUP BY results with different columns and GROUPING SETS. (C3)</li> <li>Students are able to combine 2 or more groups consisting of a combination of all the columns involved with CUBE. (C34)</li> <li>Students are able to determine the original NULL and placeholder NULL in grouping sets with GROUPING_ID. (C3)</li> </ul>	<ul> <li>Pivoting typing</li> <li>Create pivots with the PIVOT operator</li> <li>Normalize the pivot shape with the UNPIVOT operator</li> <li>Combine 2 or more different column groups with GROUPING SETS</li> <li>Shows combining combinations of all columns in grouping sets with CUBE</li> <li>Displays the merged hierarchy of all columns in grouping sets with ROLLUP</li> <li>Differentiate the NULL type in the GROUPING SETS result with GROUPING_ID</li> </ul>	<ul> <li>Job sheet 9</li> <li>UAS (3 questions)</li> </ul>	
11	<ul> <li>Students are able to explain the meaning of Metadata (C2)</li> <li>Students are able to display information about the currently active database, along with the tables and columns. (C3)</li> <li>Students are able to display session information that is currently active as</li> </ul>	<ul> <li>Definition of metadata and its types.</li> <li>Displays database information</li> <li>Displays table information</li> <li>Display column information</li> <li>Displays session information</li> </ul>	<ul> <li>Job sheets 10</li> <li>UAS (3 questions)</li> </ul>	





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	<ul> <li>well as information about the CPU and RAM on the server (C3)</li> <li>Students are able to display definitions of artificial objects such as Views, Stored Procedures, tables, functions, and other objects. (C3)</li> <li>Students are able to explain concepts and various data types in SQL Server (C2)</li> <li>Students are able to explain how to query the data type date &amp; time (C2)</li> <li>Students are able to explain and apply how to use functions related to date &amp; time data types (C2)(C3)</li> <li>Students are able to explain and apply how to combine 2 or more variables with character and non-character data types (C2)(C3)</li> <li>Students are able to explain how to use functions related to character data types (C2)</li> </ul>	<ul> <li>Displays CPU &amp; RAM information</li> <li>Displays information about user- made objects.</li> <li>Data types in SQL Server</li> <li>Query against data type Date &amp; Time</li> <li>Built-in functions related to Date &amp; Time</li> <li>Character data type</li> <li>Character data type concatenation with non- characters</li> <li>Built-in functions related to character data types</li> </ul>		
12	<ul> <li>Students are able to explain the concept of stored procedures in SQL Server. (C2)</li> <li>Students are able to create a stored procedure which in its definition contains a SELECT statement. (C3)</li> <li>Students are able to execute a stored procedure. (C3)</li> <li>Students are able to explain how to pass parameters to a stored procedure. (C2)</li> <li>Students are able to create stored procedures that return results with OUTPUT. (C3)</li> <li>Students are able to build and run dynamic SQL with EXEC and SP EXECUTESOL (C3)</li> </ul>	<ul> <li>Definition of Stored Procedures</li> <li>Create stored procedures</li> <li>Executes stored procedures</li> <li>Parameters in stored procedures</li> <li>Stored procedure that returns a value</li> <li>Understanding dynamic SQL</li> <li>Executes dynamic SQL</li> </ul>	<ul> <li>Job sheet 11</li> <li>UAS (3 questions)</li> </ul>	





13	<ul> <li>Students are able to explain how to use elements of the T-SQL language in basic programming. (C2)</li> <li>Students are able to explain about BATCH and how to use it in SQL Server. (C2)</li> <li>Students are able to explain how to declare &amp; assign variable values and SYNONYM. (C2)</li> <li>Students are able to explain how to use IF and WHILE blocks in the T-SQL program flow. (C3)</li> <li>Students are able to apply how SQL Server handles errors that appear in T-SQL code. (C3)</li> <li>Students understand how to implement structured exception handling in T-SQL. (C3)</li> <li>Students are able to explain how to get information about errors from system objects. (C2)</li> </ul>	<ul> <li>Concept of programming in T-SQL.</li> <li>BATCH</li> <li>SYNONYM</li> <li>Branching with IF and WHILE</li> <li>SQL Server error handling</li> <li>Exceptions</li> <li>T-SQL error information</li> </ul>	<ul> <li>Job sheet 12</li> <li>UAS (3 questions)</li> </ul>	
14	<ul> <li>Students are able to describe NoSQL databases and their varieties (C2)</li> <li>Students describe NoSQL in the startup industry</li> </ul>	<ul><li>Understanding NoSQL</li><li>Its application to the startup industry</li></ul>	<ul><li>Job sheet 13</li><li>UAS (3 questions)</li></ul>	
15	<ul> <li>Students are able to understand the components of queries with good performance (C1)</li> <li>Students are able to display and interpret basic queries (C3)</li> <li>Students are able to display and interpret basic queries for data performance (C3).</li> </ul>	Students are able to apply NoSQL to one case study example	<ul> <li>Job sheet 14</li> <li>UAS (3 questions)</li> </ul>	
16	Students are able to explain and apply all of the previous topics in certain cases (C2)	Case Study of T-SQL Querying	<ul><li>Job sheet 15</li><li>UAS (3 questions)</li></ul>	
17		UAS	•	
	<u>.</u>	TOTAL WEIGHT		100%





Jenuin NEGERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROCEDUME DA DEPORMATICS ENCINEEDING								
	STUDY PROGRAM: D4 IN	FORMATICS ENGINEERING							
SUBJECT 2	Advanced Database	ASSESSMENT METHOD							
CODE	Advanced Database	203005 WEIGHT (credits) / hour 2 credits / 4 hours SEMESTER 5							
	Vorny Vunhaanawa S.ST. M	weight (creatis) / nour	2 creatis / 4 nours	SEWIESTER	5				
SUITORING LECTURER	D 11. CIW 11.11 CD1	Juli							
	Roknimatul waknidan, S.Pd, I	VI I							
	Dwi Puspitasari, S.Kom., M.K	om.							
	Annisa Puspa K, S.Kom., M.K	lom.							
	Dika Rizky Yunianto, S.Kom.	, M.Kom							
	Irsyad Arif Mashudi, S.Kom.,	M.Kom.							
ASSESSMENT FORMS									
Practice									
ASSESSMENT TITLE									
UTS									
SUB COURSE LEARNING ACHIEV	EMENTS								
Students are able to install Microsoft SQ	L Server,								
Management Studio (SSMS) and connec	t it with SQL Server (C1)								
Students explain the intent and purpose of	of SQL Server services on Wind	ows. (C2)							
Students explain the concept of database	objects in SQL Server through t	the SSMS window. (C2)							
Students explain the difference between	database servers and database to	ols (GUI). (C2)							
Students are able to execute Transact-SQ	L (T-SQL) scripts via SSMS. (C	$(T, a_{0}) = 1 + N(T, a_{0}) + (a_{0})$							
Students are able to explain the basic diff	terences between Transact-SQL	(1-SQL) and ANSI SQL. $(C2)$							
Students are able to explain now to creat	e a database from an existing $S_{\rm c}$	(C2)							
Students can execute part of all of the SC	a concert of 'database context' of	-3) nd how to adjust it (C2) (C2)							
Students are able to explain and apply in Students are able to apply the concept of	$\frac{1}{1}$ $\frac{1}$	(C2)							
Students are able to apply the concept of	using a SELECT statement to a	p)							
Students are able to apply the concept of Students are able to apply how to display	Students are able to apply the concept of using a SELECT statement to analyze existing tables in the database. (CS)								
Students are able to apply now to use aliases for table names and column names (C3)									
Students are able to apply the concept of	CASE expressions and how to u	use them. (C3)							
Students are able to explain and apply ho	ow to query multi-tables in the S	ELECT clause using JOIN (C2)(C3)							
Students are able to apply how to write I	NNER JOIN queries (C3)								
Students are able to apply how to write C	OUTER JOIN queries (C3)								
Students are able to apply how to write S	ELF-JOIN and CROSS JOIN qu	ueries (C3)							





Students are able to apply how to do Data Sorting (C3) Students are able to apply how to do Data Filtering with a predicate (C3) Students are able to explain and apply how to do Data Filtering with TOP and OFFSET-FETCH (C2)(C3) Students are able to explain how to handle missing and unknown values in real data. (C3) Students can explain data types in SQL Server (C2) Students can explain queries against data types Date & Time (C2) Students can explain built-in functions related to Date & Time (C2) Students can explain character data types Concatenation of character data types with non-characters (C2) Students can explain built-in functions related to character data types (C5) Students can explain how to write queries that summarize data using the built-in aggregation function (C2) Students can explain and apply how to use the GROUP BY clause to arrange rows into several groups (C2)(C3) Students can explain and apply how to use the HAVING clause to filter data according to search conditions (C2) (C3) Students are able to implement the intent and use of nested queries in other queries (C3) Students explain how to write a self-contained sub-query that returns scalar or multi-valued results (C2) Students are able to apply how to write correlated sub-queries and return scalar or multi-valued results (C3) Students are able to apply how to use the EXISTS predicate to efficiently check the existence of a row in a sub-query (C3) Students are able to explain the purpose of Set Operations (C2) Students are able to apply and explain the differences between UNION & UNION ALL (C2)(C3) Students are able to apply and explain the differences between CROSS APPLY & OUTER APPLY (C3)(C2) Students are able to apply, and explain the differences EXCEPT & INTERSECT (C2)(C3) Students explain the meaning of TRIGGER (C2) Students explain the difference between TRIGGER AFTER & TRIGGER INSTEAD OF (C2) Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) (C3) Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) (C3) Students are able to explain the purpose of Set Operations (C2) Students are able to apply and explain the differences between UNION & UNION ALL (C2)(C3) Students are able to apply and explain the differences between CROSS APPLY & OUTER APPLY (C3)(C2) Students are able to apply, and explain the differences EXCEPT & INTERSECT (C2)(C3) Students explain the meaning of TRIGGER (C2) Students explain the difference between TRIGGER AFTER & TRIGGER INSTEAD OF (C2) Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) (C3) Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) (C3) **DESCRIPTION** Practicum on a case study WORKING METHOD Practicum on case studies. The questions are accessed through e-learning lmsslc .polinema.ac.id, done in a take home and open book manner **OUTER FORMAT** Work Object: UTS

Outcome Form: practical report from the case study on the problem





# INDICATORS, CRITERIA AND WEIGHT ASSESSMENT Conformity of answers and practical steps: 10 0 % The UTS assessment weight is 25% of 100% of the assessment for this course IMPLEMENTATION SCHEDULE 8th week 1 week OTHERS REQUIRED: REFERENCES Microsoft Press, Querying Microsoft® SQL Server ® 2012, 2012

Microsoft Press, Administering Microsoft® SQL Server ® 2012, 2012





	MALANG STATE POLYTE	CHNIC			
LANUK NEGERI AN	INFORMATION TECHNOLOGY DEPARTMENT				
	STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	A deserved Details are	ASSESSMENT METHOD			
	Advanced Database	WEIGHT (and the) / harry	2	CEMECTED	5
SUPPOPTING	K11203005	wEIGHT (credits) / nour	2 credits / 4 nours	SEMESTER	3
SUFFORTING LECTURER	Polyhimatul Walkhidah S.Dd.				
	Duri Duanitaani S.Kam. M.K.				
	Dwi Puspitasari, S.Kom., M.K	om.			
	Annisa Puspa K, S.Kom., M.K	om.			
	Dika Rizky Yunianto, S.Kom.,	M.Kom			
	Irsyad Arif Mashudi, S.Kom.,	M.Kom.			
ASSESSMENT FORMS					
ASSESSMENT TITLE					
SUB COURSE LEARNING ACHIEV					
Students are able to install Microsoft SQ	L Server,				
Students explain the intent and purpage	of SOL Server services on Wind	$O_{\rm MMG}$ (C2)			
Students explain the concept of database	objects in SOL Server through t	be SSMS window (C2)			
Students explain the difference between	database servers and database to	als (GUI) (C2)			
Students explain the difference between Students are able to execute Transact-SC	(T-SOL) scripts via SSMS ((	[3]			
Students are able to explain the basic dif	ferences between Transact-SOL	(T-SOL) and ANSI SOL. (C2)			
Students are able to explain how to creat	e a database from an existing SC	L file (C2)			
Students can execute part or all of the SQ	)L script from an existing file. (	$\overline{C3}$			
Students are able to explain and apply th	e concept of 'database context' a	nd how to adjust it. (C2) (C3)			
Students are able to apply the concept of	using 'comments' in T-SQL. (Ca	3)			
Students are able to apply the concept of using a SELECT statement to analyze existing tables in the database. (C3)					
Students are able to apply how to display data uniquely/distinctly. (C3)					
Students are able to apply how to use aliases for table names and column names. (C3)					
Students are able to apply the concept of CASE expressions and how to use them. (C3)					
Students are able to explain and apply how to query multi-tables in the SELECT clause using JOIN (C2)(C3)					
Students are able to apply how to write I	NNER JOIN queries (C3)				
Students are able to apply how to write C	DUTER JOIN queries (C3)	. (62)			
Students are able to apply how to write S	SELF-JOIN and CROSS JOIN qu	ieries (C3)			
Students are able to apply how to do Data Sorting (C3)					





Students are able to apply how to do Data Filtering with a predicate (C3) Students are able to explain and apply how to do Data Filtering with TOP and OFFSET-FETCH (C2)(C3) Students are able to explain how to handle missing and unknown values in real data. (C3) Students can explain data types in SQL Server (C2) Students can explain queries against data types Date & Time (C2) Students can explain built-in functions related to Date & Time (C2) Students can explain character data types Concatenation of character data types with non-characters (C2) Students can explain built-in functions related to character data types (C5) Students can explain how to write queries that summarize data using the built-in aggregation function (C2) Students can explain and apply how to use the GROUP BY clause to arrange rows into several groups (C2)(C3) Students can explain and apply how to use the HAVING clause to filter data according to search conditions (C2) (C3) Students are able to implement the intent and use of nested queries in other queries (C3) Students explain how to write a self-contained sub-query that returns scalar or multi-valued results (C2) Students are able to apply how to write correlated sub-queries and return scalar or multi-valued results (C3) Students are able to apply how to use the EXISTS predicate to efficiently check the existence of a row in a sub-query (C3) Students are able to explain the purpose of Set Operations (C2) Students are able to apply and explain the differences between UNION & UNION ALL (C2)(C3) Students are able to apply and explain the differences between CROSS APPLY & OUTER APPLY (C3)(C2) Students are able to apply, and explain the differences EXCEPT & INTERSECT (C2)(C3) Students explain the meaning of TRIGGER (C2) Students explain the difference between TRIGGER AFTER & TRIGGER INSTEAD OF (C2) Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) (C3) Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) (C3) Students are able to explain the purpose of Set Operations (C2) Students are able to apply and explain the differences between UNION & UNION ALL (C2)(C3) Students are able to apply and explain the differences between CROSS APPLY & OUTER APPLY (C3)(C2) Students are able to apply, and explain the differences EXCEPT & INTERSECT (C2)(C3) Students explain the meaning of TRIGGER (C2) Students explain the difference between TRIGGER AFTER & TRIGGER INSTEAD OF (C2) Students are able to apply and activate TRIGGER AFTER (INSERT, UPDATE, & DELETE) (C3) Students are able to apply and activate the TRIGGER INSTEAD OF (INSERT, UPDATE, & DELETE) (C3) Students are able to explain the purpose and benefits of SQL Windowing (C2) Students are able to create windows with OVER clauses (C3) Students are able to partition windows (C3) Students are able to place orders on the window (C3) Students are able to do framing on windows (C3) Students are able to explain the concept of window function. (C2) Students are able to explain and be able to use the aggregation function in window (C2)(C3) Students are able to explain and be able to use the ranking function in window (C2)(C3)





Students are able to explain and be able to use the offset function in window (C2)(C3) Students are able to define the meaning of the distribution function on the window. (C2) Students are able to present data in pivot form using the PIVOT operator (C3) Students are able to change the data format from pivot to normal form with UNPIVOT. (C3) Students are able to combine 2 or more GROUP BY results with different columns and GROUPING SETS. (C3) Students are able to combine 2 or more groups consisting of a combination of all the columns involved with CUBE. (C34) Students are able to combine 2 or more groups consisting of a hierarchy of all columns involved with CUBE. (C3) Students are able to determine the original NULL and placeholder NULL in grouping sets with GROUPING ID. (C3) Students are able to explain the meaning of Metadata (C2) Students are able to display information about the currently active database, along with the tables and columns. (C3) Students are able to display session information that is currently active as well as information about the CPU and RAM on the server (C3) Students are able to display definitions of artificial objects such as Views, Stored Procedures, tables, functions, and other objects. (C3) Students are able to explain concepts and various data types in SQL Server (C2) Students are able to explain how to query the data type date & time (C2) Students are able to explain and apply how to use functions related to date & time data types (C2)(C3) Students are able to explain and apply how to combine 2 or more variables with character and non-character data types (C2)(C3) Students are able to explain how to use functions related to character data types (C2) Students are able to explain the concept of stored procedures in SQL Server. (C2) Students are able to create a stored procedure which in its definition contains a SELECT statement. (C3) Students are able to execute a stored procedure. (C3) Students are able to explain how to pass parameters to a stored procedure. (C2) Students are able to create stored procedures that return results with OUTPUT. (C3) Students explain the concept of dynamic SQL (C2) Students are able to build and run dynamic SQL with EXEC and SP EXECUTESQL. (C3) Students are able to explain how to use elements of the T-SQL language in basic programming. (C2) Students are able to explain about BATCH and how to use it in SQL Server. (C2) Students are able to explain how to declare & assign variable values and SYNONYM. (C2) Students are able to explain how to use IF and WHILE blocks in the T-SOL program flow, (C3) Students are able to apply how SQL Server handles errors that appear in T-SQL code. (C3) Students understand how to implement structured exception handling in T-SQL. (C3) Students are able to explain how to get information about errors from system objects. (C2) Students are able to describe NoSQL databases and their varieties (C2) Students describe NoSQL in the startup industry Students are able to understand the components of queries with good performance (C1) Students are able to display and interpret basic queries (C3) Students are able to display and interpret basic queries for data performance (C3). Students are able to explain and apply all of the previous topics in certain cases (C2) DESCRIPTION Answer questions from meeting material 1-16





WORKING METHOD	
The questions are done through e-learning lmsslc .polinema.ac.id	
OUTER FORMAT	
Work Object: UAS	
Outer Form: student answers	
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers: 100%	
The UTS assessment weight is 35% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
17th week	1 week
OTHERS REQUIRED:	
REFERENCES	
Microsoft Press, Querying Microsoft® SQL Server ® 2012, 2012	
Microsoft Press, Administering Microsoft® SQL Server ® 2012, 2012	





# ASSESSMENT AND EVALUATION PLAN

# **Object Oriented Programming**

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students are able to understand the contents of the syllabus and lecture contracts;</li> <li>Students are able to understand the basic concept of PBO;</li> <li>Students are able to distinguish object-oriented paradigms from structural paradigms.</li> </ul>	<ul> <li>The difference between the object-oriented paradigm and the structural paradigm</li> <li>The basic concept of PBO         <ul> <li>class</li> <li>object</li> <li>Encapsulation</li> <li>inheritance</li> <li>Polymorphism</li> </ul> </li> <li>Introduction to UML Class Diagram modeling</li> </ul>	<ul> <li>Task 1: Oral test</li> <li>Quiz 1 (5 questions)</li> <li>UTS (8 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 0.8% Task 2: 0.8% Task 3: 0.8% Task 4: 0.8% Task 5: 0.8% Quiz 1: 12.5% UTS: 30%
2	<ul> <li>Students are able to understand the basic concept of PBO;</li> <li>Students are able to understand the concepts of class, object, encapsulation, inheritance, and polymorphism;</li> <li>Students are able to create UML models based on PBO case studies.</li> </ul>	<ul> <li>PBO introduction</li> <li>The difference between the object-oriented paradigm and the structural paradigm</li> <li>The basic concept of PBO:</li> <li>class</li> <li>object</li> <li>Encapsulation</li> <li>inheritance</li> <li>Polymorphism</li> <li>Introduction to UML modeling</li> </ul>	<ul> <li>Task 2: written assignment</li> <li>Quiz 1 (5 questions)</li> <li>UTS (8 questions)</li> <li>UAS (2 questions)</li> </ul>	
3	<ul> <li>Students are able to understand the basic concept of encapsulation;</li> <li>Students are able to make UML notation in the form of access modifier notation and static notation.</li> </ul>	<ul> <li>constructor</li> <li>Access modifiers</li> <li>Attribute/Method Class</li> <li>Instantiation Attributes/Methods</li> <li>Setters and Getters</li> <li>UML: Access modifier notation and static notation</li> </ul>	<ul> <li>Task 3: oral test</li> <li>Quiz 1 (5 questions)</li> <li>UTS (8 questions)</li> <li>UAS (4 questions)</li> </ul>	
4	<ul> <li>Students are able to understand the concept of class relations;</li> <li>Students are able to design class diagrams from certain case studies.</li> </ul>	<ul> <li>Has-A relation (Case study 1 class has a has-a relationship with 1 object from another class)</li> <li>Depiction of class relationships with class diagrams</li> </ul>	<ul> <li>Task 4: written assignment</li> <li>Quiz 1 (5 questions)</li> <li>UTS (8 questions)</li> <li>UAS (4 questions)</li> </ul>	





<b>5</b> 6,7	Students are able to understand the concept of	<ul> <li>Has-A relationship (Case study 1 class has a has-a relationship with more than 1 object from another class)</li> <li>Quiz 1</li> <li>Definition of Inheritance</li> </ul>	• Task 5: written assignment	
	inheritance.	<ul><li>Single and Multilevel Inheritance</li><li>Super keywords</li><li>UML:inheritance relations</li></ul>	<ul><li>UTS (8 questions)</li><li>UAS (4 questions)</li></ul>	
8		UTS		
9	Students are able to understand the concepts of Overriding and Overloading.	<ul><li>Overriding</li><li>Overloading</li></ul>	<ul> <li>Task 6: oral test</li> <li>Quiz (5 questions)</li> <li>UAS (4 questions)</li> </ul>	Task 6: 0.8% Task 7: 0.8% Task 8: 0.8%
10	Students are able to understand the concept of Abstract Class	<ul><li>Abstract Class concept</li><li>Abstract methods</li><li>UML: abstract notation</li></ul>	<ul><li>Task 7: oral test</li><li>Quiz (5 questions)</li><li>UAS (4 questions)</li></ul>	Task 9: 0.8% Task 10: 0.8% Task 11: 0.8%
11	Students are able to understand the concept of Interface.	<ul> <li>Interfaces concept</li> <li>Different Interface and Abstract Class</li> <li>Creating interfaces that implements to interfaces</li> <li>UML: implements interface and relation notation</li> </ul>	<ul> <li>Task 8: written assignment</li> <li>Quiz (5 questions)</li> <li>UAS (4 questions)</li> </ul>	Final Projects: 10% Quiz 1: 12.5% UTS: 30%
12	Students are able to understand the concept of Polymorphism.	<ul> <li>Polymorphism concept</li> <li>heterogeneous collections</li> <li>polymorphic arguments</li> <li>virtual method invocations</li> <li>cast objects</li> </ul>	<ul> <li>Task 9: oral test</li> <li>Quiz (5 questions)</li> <li>UAS (4 questions)</li> </ul>	
13		Quiz 2		
14	Students are able to understand the concept of GUI.	<ul> <li>Frames, Menus, Textfields, Buttons, Labels, Comboboxes, Radiobuttons, Checkboxes</li> <li>Event Handling (action performed)</li> </ul>	<ul> <li>Task 10: group discussion and presentation</li> <li>UAS (4 questions)</li> </ul>	
15	• Students are able to understand the concept of GUI and Database and Java API	<ul><li>GUI, Database and Java API:</li><li>MySQL JDBC</li><li>CRUD with GUI</li></ul>	<ul><li>Task 11: oral test</li><li>UAS (4 questions)</li></ul>	





	• Students are able to understand the concept of Java API.	Java Docs		
16	Students are able to apply the theory they have learned into a comprehensive application.	Designing a class diagram of a given case.	FinalProject	
17	7 UAS			
	TOTAL WEIGHT			





	MALANG STATE POLYTECHNIC						
LEANINK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT						
	STUDY PROGRAM: D4 INFORMATICS ENGINEERING						
		ASSESSMENT METHOD					
SUBJEC SUBJEC	Object Oriented Programming	Object Oriented Programming					
CODE CODE	RTI203007	TI203007WEIGHT (credits) / hour2 credits / 4 hoursSEMESTER3					
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.						
	Muhammad Shulhan Khairy, S	S.Kom, M.Kom					
	Priska Choirina, SST, M.Tr.T						
	Frihandhika Permana SPd., M	Kom.					
	Septian Enggar Sukmana, S.P.	d., MT					
	Banni Satria Andoko, S. Kom.	., M.MSI					
ASSESSMENT FORMS							
Online test							
ASSESSMENT TITLE							
Quiz 1							
SUB COURSE LEARNING ACHIEVI	EMENTS						
Students are able to understand the basic	concept of PBO;						
Students are able to distinguish object-or	iented paradigms from structura	al paradigms.					
Students are able to understand the basic	concept of PBO;						
Students are able to understand the conce	pts of class, object, encapsulation	on, inheritance, and polymorphism;					
Students are able to create UML models	based on PBO case studies.						
Students are able to understand the basic	concept of encapsulation;						
Students are able to make UML notation	in the form of access modifier r	notation and static notation.					
Students are able to understand the conce	pt of class relations;						
DESCRIPTION	s from certain case studies.						
Answer quiz questions from meeting mat	erial 1.4						
WORKING METHOD							
The questions are done through e-learning	g lmsslc, polinema ac id						
OUTER FORMAT	g missie ipomientalaona						
Job Object: quiz							
Outer Form: student quiz answers							
INDICATORS, CRITERIA AND WEI	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers: 10 0 %	Conformity of answers: 10 0 %						
The score for Quiz 1 is 12.5% of 100% for	The score for Quiz 1 is 12.5% of 100% for this course						
IMPLEMENTATION SCHEDULE							
4th week			60 minutes				





## **OTHERS REQUIRED:**

#### REFERENCES

Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.





Julik NEGERI AP	MALANG STATE POLYTE INFORMATION TECHNOI STUDY PROCEAM: DAINU	CCHNIC LOGY DEPARTMENT				
	STUDY PROGRAM: D4 IN	IUDI I RUGRAMI, D4 INFORMATICS ENGINEERING ASSESSMENT METHOD				
SUBJECT SUBJECT	Ohiert Oniented Dreemanning	ASSESSMENT METHOD				
SUBJECT	Dijeci Oriented Programming	WEIGHT (and the) / have	2	CEMECTED	12	
	K11203007	wEIGHT (creaits) / liour	2 creans / 4 nours	SEWIESTER	3	
SUPPORTING LECTURER	Innam Fahrur Közi, S1., M1.	am Fanrur Közi, S1., M1.				
	Muhammad Shulhan Khairy, S	S.Kom, M.Kom				
	Priska Choirina, SST, M.Tr.T					
	Frihandhika Permana SPd., MI	Kom.				
	Septian Enggar Sukmana, S.P.	l., MT				
	Banni Satria Andoko, S. Kom.	, M.MSI				
ASSESSMENT FORMS						
Online test						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students are able to understand the conce	epts of Overriding and Overloadi	ing				
Students are able to understand the conce	ept of Abstract Class					
Students are able to understand the conce	ept of Interface					
Students are able to understand the conce	pt of Polymorphism					
DESCRIPTION						
Answering quiz questions from meeting	materials 10-13					
WORKING METHOD						
The questions are done through e-learnin	g lmsslc .polinema.ac.id					
OUTER FORMAT						
Job Object: quiz						
Outer Form: student quiz answers						
INDICATORS, CRITERIA AND WEI	IGHT ASSESSMENT					
Conformity of answers: 10.0 %						
The score for $Ouiz 2 is 12.5\%$ of $100\%$ f	or this course					
IMPLEMENTATION SCHEDULE						
14th week			60 minutes	2		
OTHERS REQUIRED.				, 		
official Regulation						
REFERENCES						





- 1. Horstmann, CS, & Cornell, G. (2007). Core Java Volume I-Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.
- 2. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II-Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.
- 3. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.





	MALANG STATE POLYTE	ECHNIC			
KHIK NEGERI A	INFORMATION TECHNOLOGY DEPARTMENT				
	STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SUBJECT X	Object Oriented Programming				
CODE	RTI203007	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 3	
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.				
	Muhammad Shulhan Khairy, S	S.Kom, M.Kom			
	Priska Choirina, SST, M.Tr.T				
	Frihandhika Permana SPd., M	Kom.			
	Septian Enggar Sukmana, S.Po	d., MT			
	Banni Satria Andoko, S. Kom.	, M.MSI			
ASSESSMENT FORMS		, 			
Online test					
ASSESSMENT TITLE					
UTS					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students are able to understand the basic	concept of PBO;				
Students are able to distinguish object-or	riented paradigms from structura	l paradigms.			
Students are able to understand the basic	concept of PBO;				
Students are able to understand the conce	epts of class, object, encapsulation	on, inheritance, and polymorphism;			
Students are able to create UML models	based on PBO case studies.				
Students are able to understand the basic	concept of encapsulation;	actation and static notation			
Students are able to make UNL hotation	In the form of access modifier h	iotation and static notation.			
Students are able to design class diagram	ept of class relations,				
Students are able to understand the conce	ent of inheritance				
DESCRIPTION					
Answer UTS questions from meeting ma	terial 1-7				
WORKING METHOD					
The questions are done through e-learnin	The questions are done through e-learning lmsslc .polinema.ac.id				
OUTER FORMAT					
Work Object: UTS					
Outcome Form: UTS student answers					
INDICATORS, CRITERIA AND WE	IGHT ASSESSMENT				
Conformity of answers: 10 0 %					
The UTS assessment weight is 25 % of 1	00% of the assessment for this c	course			
IMPLEMENTATION SCHEDULE					





# 8th week 60 minutes OTHERS REQUIRED: REFERENCES Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.





A LANIK NEGERI & T	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING ASSESSMENT METHOD					
SUBJECT	Object Oriented Programming	ASSESSMENT METHOD biect Oriented Programming				
CODE	RTI203007	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.	() Lioni (croats) / noui	2 creates / Filours		5	
	Muhammad Shulhan Khairy, S	.Kom. M.Kom				
	Priska Choirina, SST, M.Tr.T	,				
	Frihandhika Permana SPd., Ml	Kom.				
	Septian Enggar Sukmana, S.P.	L. MT				
	Banni Satria Andoko S Kom	MMSI				
ASSESSMENT FORMS	Builli Builli Alluoko, St Romi	,				
Online test						
ASSESSMENT TITLE						
UAS						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students are able to understand the basic	concept of PBO;					
Students are able to distinguish object-or	iented paradigms from structura	l paradigms.				
Students are able to understand the basic	concept of PBO;					
Students are able to understand the conce	epts of class, object, encapsulation	on, inheritance, and polymorphism;				
Students are able to create UML models	based on PBO case studies.					
Students are able to understand the basic	concept of encapsulation;					
Students are able to make UNIL notation	in the form of access modifier n	otation and static notation.				
Students are able to understand the conce	pt of class relations;					
Students are able to understand the conce	ent of inheritance					
Students are able to understand the concept of filleritance Students are able to understand the concepts of Overriding and Overloading						
Students are able to understand the conce	ept of Abstract Class					
Students are able to understand the concept of Interface						
Students are able to understand the concept of Polymorphism						
Students are able to understand the concept of GUI.						
Students are able to understand the concept of GUI and Database and Java API						
Students are able to understand the concept of Java API.						
Students are able to apply the theory they	have learned into a comprehens	sive application.				
DESCRIPTION						
Answer questions from meeting material 1-16						





WORKING METHOD	
The questions are done through e-learning lmsslc .polinema.ac.id	
OUTER FORMAT	
Work Object: UTS	
Outcome Form: UTS student answers	
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers: 10 0 %	
The UAS assessment weight is 30% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
17th week	60 minutes
OTHERS REQUIRED:	
REFERENCES	
Horstmann, CS, & Cornell, G. (2007). Core Java Volume I-Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice H	all.
Horstmann, CS, & Cornell, G. (2008). Core Java Volume II-Advanced Features, Eighth Edition. Network Circle, Santa Clara: Pren	tice Hall.
Rickvanto, I. (2005), Object-Oriented Programming Basics with Java 2, Yogyakarta; Andi Offset,	





# ASSESSMENT AND EVALUATION PLAN

# **PBO** practicum

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students are able to explain the basic concepts of PBO (C2)</li> <li>Students are able to analyze the differences between structural programming and object-oriented programming (C4)</li> <li>Students are able to identify the form of Class diagram modeling (C1)</li> </ul>	<ul> <li>The difference between the object-oriented paradigm and the structural paradigm</li> <li>The basic concept of PBO         <ul> <li>class</li> <li>object</li> <li>Encapsulation</li> <li>inheritance</li> <li>Polymorphism</li> </ul> </li> <li>Introduction to UML Class Diagram modeling</li> </ul>	• Job sheet 1	Jobsheet 3: 2.5% Jobsheet 4: 2.5% Quiz 1: 15% UTS: 30%
2	<ul> <li>Students are able to apply the concept of class and object in the form of programming (C3)</li> <li>Students are able to apply the steps for accessing attributes and methods in programming languages (C3)</li> <li>Students are able to apply the exception concept using try-catch in programming (C3)</li> <li>Students are able to apply class diagrams in certain cases (C3)</li> </ul>	<ul> <li>class</li> <li>object</li> <li>Attribute</li> <li>method</li> <li>Instantiation</li> <li>Accessing Attributes and Methods</li> <li>Try-Catch</li> <li>UML:Class Diagrams</li> </ul>	• Job sheets 2	
3	Students are able to <b>apply</b> encapsulation in a programming language (C3)	<ul> <li>constructor</li> <li>Access modifiers</li> <li>Attribute/Method Class</li> <li>Instantiation Attributes/Methods</li> <li>Setters and getters</li> <li>UML: Access modifier notation and static notation</li> </ul>	• Job sheets 3	
4	<ul> <li>Students are able to analyze class relations based on certain case studies (C4)</li> <li>Students are able to apply class relations in the form of diagrams (C3)</li> </ul>	<ul> <li>Has-A relation (Case study 1 class has a has-a relationship with 1 object from another class)</li> <li>Depiction of class relationships with class diagrams</li> </ul>	• Job sheets 4	





<b>5</b> 6,7	<ul> <li>Students are able to define the notion of inheritance (C2)</li> <li>Students are able to apply the concept of single and multiple inheritance (C3)</li> <li>Students are able to apply inheritance relations in the form of</li> </ul>	<ul> <li>Has-A relationship (Case study 1 class has a has-a relationship with more than 1 object from another class)</li> <li>Quiz 1</li> <li>Definition of Inheritance</li> <li>Single and Multilevel Inheritance</li> <li>Super keywords</li> <li>UML:inheritance relations</li> </ul>	• Job sheets 5	
0	diagrams (C3)	UTC		
<b>o</b> 9	Students are able to <b>apply</b> the concepts of overriding and overloading in programming languages (C3)	<ul><li>Overriding</li><li>Overloading</li></ul>	• Job sheets 6	Jobsheet 6: 2.5% Jobsheet 7: 2.5%
10	Students are able to <b>apply</b> abstract concepts to classes and methods (C3)	<ul> <li>Abstract Class concept</li> <li>Abstract methods</li> <li>UML: abstract notation</li> </ul>	• Job sheets 7	UAS: 30%
11	Students are able to <b>apply</b> the interface and implement a class in the interface (C3)	<ul> <li>Interfaces concept</li> <li>Different Interface and Abstract Class</li> <li>Interface creation</li> <li>How to create a class that implements to an interface</li> <li>UML: implements interface and relation notation</li> </ul>	• Job sheet 8	
12	<ul> <li>Students are able to apply the concept of polymorphism in programming languages (C3)</li> <li>Students are able to apply virtual methods and casting objects (C3)</li> </ul>	<ul> <li>Polymorphism concept</li> <li>heterogeneous collections</li> <li>polymorphic arguments</li> <li>virtual method invocations</li> <li>cast objects</li> </ul>	• Job sheet 9	
13		Quiz 2		
14	• Students are able to apply GUI components to the development of a program (C3)	<ul> <li>Frames, Menus, Textfields, Buttons, Labels, Comboboxes, Radiobuttons, Checkboxes</li> </ul>	• Job sheets 10	





15	<ul> <li>Students are able to implement event handling in accordance with the GUI components used (C3)</li> <li>Students are able to create APIs from the Java programming language (C6)</li> <li>Students are able to implement a database connection with the Java programming language (C3)</li> <li>Students are able to apply GUI to Java programs using a database (C3)</li> </ul>	<ul> <li>Event Handling (action performed)</li> <li>Java Docs</li> <li>collection</li> <li>MySQL (JDBC) Database with GUI</li> <li>CRUD with GUI</li> <li>Model classes, DAO classes</li> </ul>	• Job sheet 11	
16	Students are able <b>to explain</b> the progress of the big task being done (C2)	Designing a class diagram of a given case.		
17		]		
		TOTAL WEIGHT		100%





	MALANG STATE POLYTE	ECHNIC							
SUNIK NEGERIAN	INFORMATION TECHNOLOGY DEPARTMENT								
	STUDY PROGRAM: D4 INFORMATICS ENGINEERING								
ASSESSMENT METHOD									
SUBJECT	Object Oriented Programming	Practicum							
CODE	RTI203008	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3				
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.								
	Muhammad Shulhan Khairy, S.Kom, M.Kom								
	Priska Choirina, SST, M.Tr.T								
	Frihandhika Permana SPd., MKom.								
	Septian Enggar Sukmana, S.Pd., MT								
	Banni Satria Andoko, S. Kom., M.MSI								
ASSESSMENT FORMS									
Quiz 1									
ASSESSMENT TITLE									
Quiz 1									
SUB COURSE LEARNING ACHIEVEMENTS									
Students are able to understand the basic concept of PBO;									
Students are able to distinguish object-oriented paradigms from structural paradigms.									
Students are able to understand the basic concept of PBO;									
Students are able to understand the concepts of class, object, encapsulation, inheritance, and polymorphism;									
Students are able to create UML models based on PBO case studies.									
Students are able to understand the basic concept of encapsulation; Students are able to make UML notation in the form of access modifier notation and static notation									
Students are able to understand the concent of class relations:									
Students are able to design class diagrams from certain case studies									
DESCRIPTION									
Do the questions in practical form									
WORKING METHOD									
Analyze case studies on questions and apply object-oriented programming to programs and explain the results of programs that have been made.									
Questions are accessed via e-learning lmsslc.polinema.ac.id									
OUTER FORMAT									
Job Object: quiz									
Outcome Form: student programs and presentations									
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT									
Suitability of the program made : 5.0 %									
Program presentation: 50%									
The weight for Quiz 1 is 1.5 % of 100% for this course									





# **IMPLEMENTATION SCHEDULE**

5th week

200 minutes

# **OTHERS REQUIRED:**

#### REFERENCES

Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.




$\langle$	MALANG STATE POLY	TECHNIC				
SKNIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM: D4	INFORMATICS ENGINEERING				
	ASSESSMENT METHOD					
SUBJECT	Object Oriented Programmi	ng Practicum			_	
CODE	RTI203008	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT					
	Muhammad Shulhan Khairy	y, S.Kom, M.Kom				
	Priska Choirina, SST, M.Tr	.Т				
	Frihandhika Permana SPd.,	MKom.				
	Septian Enggar Sukmana, S	.Pd., MT				
	Banni Satria Andoko, S. Ko	m., M.MSI				
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students are able to understand the conce	epts of Overriding and Overlo	ading				
Students are able to understand the conce	ept of Abstract Class					
Students are able to understand the conce	ept of Interface					
Students are able to understand the conce	ept of Polymorphism					
DESCRIPTION Do the questions in amentical form						
WORKING METHOD						
Analyze case studies on questions and an	nly object oriented program	ning to programs and explain the results of i	programs that have been made			
Questions are accessed via e-learning lm	sslc polinema ac id	ining to programs and explain the results of j	biograms that have been made.			
OUTER FORMAT	ssie.pointeina.ae.ia					
Job Object: quiz						
Outcome Form: student programs and pr	esentations					
INDICATORS, CRITERIA AND WE	IGHT ASSESSMENT					
Suitability of the program made : 5 0 %						
Program presentation: 50%						
The weight for Quiz 1 is 1.5 % of 100% for this course						
IMPLEMENTATION SCHEDULE						
Week 14			200 minute	8		
OTHERS REQUIRED:						
DEEDENCES						
KEFEKENCES						





Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.





$\wedge$	MALANG STATE POLYT	<b>FECHNIC</b>			
ENNIK NEGER . A	INFORMATION TECHNO	OLOGY DEPARTMENT			
	STUDY PROGRAM: D4 I	NFORMATICS ENGINEERING			
ASSESSMENT METHOD					
SUBJECT	Object Oriented Programmin	ng Practicum			
CODE	RTI203008	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.				
	Muhammad Shulhan Khairy,	, S.Kom, M.Kom			
	Priska Choirina, SST, M.Tr.	Т			
	Frihandhika Permana SPd., N	MKom.			
	Septian Enggar Sukmana, S.	Pd., MT			
	Banni Satria Andoko, S. Kor	m., M.MSI			
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
UTS					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students are able to understand the basic	concept of PBO;	1			
Students are able to distinguish object-or	concernt of <b>PP</b> O:	ral paradigms.			
Students are able to understand the conce	ents of class object encansula	tion inheritance and polymorphism.			
Students are able to create UML models	based on PBO case studies	tion, internance, and porymorphism,			
Students are able to understand the basic	concept of encapsulation:				
Students are able to make UML notation	in the form of access modifier	r notation and static notation.			
Students are able to understand the conce	ept of class relations;				
Students are able to design class diagram	is from certain case studies				
Students are able to understand the conce	ept of inheritance				
DESCRIPTION					
Do the questions in practical form					
WORKING METHOD					
Analyze case studies on questions and apply object-oriented programming to programs and explain the results of programs that have been made.					
Questions are accessed via e-learning imssic.polinema.ac.id					
UUTEK FUKMAT Work Object LITS					
Outcome Form: student programs and presentations					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Suitability of the program made : 5 0 %					
Program presentation: 50%					





200 minutes

The weight for Quiz 1 is 30 % of 100% for this course

#### IMPLEMENTATION SCHEDULE

8th week

### **OTHERS REQUIRED:**

#### REFERENCES

Horstmann, CS, & Cornell, G. (2007). Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Horstmann, CS, & Cornell, G. (2008). Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall. Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.





$\land$	MALANG STATE POLYT	ECHNIC				
ENNIK NEGERI M	INFORMATION TECHNO	LOGY DEPARTMENT				
() is the second s	STUDY PROGRAM: D4 IN	FORMATICS ENGINEERING				
ASSESSMENT METHOD						
SUBJECT	UBJECT Object Oriented Programming Practicum					
CODE	RTI203008	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 3		
SUPPORTING LECTURER	Imam Fahrur Rozi, ST., MT.	nam Fahrur Rozi, ST., MT.				
	Muhammad Shulhan Khairy,	ıhammad Shulhan Khairy, S.Kom, M.Kom				
	Priska Choirina, SST, M.Tr.T	riska Choirina, SST, M.Tr.T				
	Frihandhika Permana SPd., M	IKom.				
	Septian Enggar Sukmana, S.P	Pd., MT				
	Banni Satria Andoko, S. Kom	n. M.MSI				
ASSESSMENT FORMS	,					
UAS						
ASSESSMENT TITLE						
UAS						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students are able to understand the basic	concept of PBO;					
Students are able to distinguish object-or	riented paradigms from structura	al paradigms.				
Students are able to understand the basic	concept of PBO;					
Students are able to understand the conce	epts of class, object, encapsulati	ion, inheritance, and polymorphism;				
Students are able to create UML models	based on PBO case studies.					
Students are able to understand the basic	concept of encapsulation;					
Students are able to make UNL holation	in the form of access modifier i	notation and static notation.				
Students are able to design class diagram	s from certain case studies					
Students are able to understand the conce	ept of inheritance					
Students are able to understand the conce	epts of Overriding and Overload	ling				
Students are able to understand the conce	ept of Abstract Class	8				
Students are able to understand the concept of Interface						
Students are able to understand the concept of Polymorphism						
Students are able to understand the concept of GUI.						
Students are able to understand the concept of GUI and Database and Java API						
Students are able to understand the concept of Java API.						
Students are able to apply the theory they	y have learned into a compreher	nsive application.				
DESCRIPTION						
Practicum and presentation of major assi	gnments					
WORKING METHOD						





Implementing a case study into the program as a major task then presenting the results of the program that has been made				
OUTER FORMAT				
Work Object: UAS				
Outcome Form: student programs and presentations				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
Suitability of the program made : 5 0 %				
Program presentation: 50%				
The weight for Quiz 1 is 30 % of 100% for this course				
IMPLEMENTATION SCHEDULE				
Week 16-17	2 weeks			
OTHERS REQUIRED:				
REFERENCES				
Horstmann, CS, & Cornell, G. (2007). Core Java Volume I-Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.				
Horstmann, CS, & Cornell, G. (2008). Core Java Volume II-Advanced Features, Eighth Edition. Network Circle, Santa Clara: Pren	tice Hall.			
Rickyanto, I. (2005). Object-Oriented Programming Basics with Java 2. Yogyakarta: Andi Offset.				





# ASSESSMENT AND EVALUATION PLAN PANCASILA

Week	Sub-CP-MK	Subject	Assessment	Weight
1	<ol> <li>Recognize the final objective of the course</li> <li>Be able to explain the definition of Pancasila historically and culturally.</li> <li>Able to understand the concept of Pancasila historically and culturally</li> </ol>	<ol> <li>The ultimate goal of lectures</li> <li>Historical and cultural definition of Pancasila</li> </ol>		Quiz: 20% Duty: 40% UTS: 20% UAS: 20%
2	Able to explain the definition of Pancasila juridically and philosophically	Juridical and philosophical definition of Pancasila		
3	Able to explain Pancasila in the context of the history of the struggle of the Indonesian nation	Able to explain Pancasila in the context of the history of the struggle of the Indonesian nation		
4		Quiz 1		
5	Be able to explain the definition of Pancasila as a philosophical system	- The definition of Pancasila as a system of philosophy		
6	Able to explain and decipher the 1945 Constitution of the Republic of Indonesia and the amendments to the 1945 Constitution of the Republic of Indonesia	Able to explain and decipher the 1945 Constitution of the Republic of Indonesia and the amendments to the 1945 Constitution of the Republic of Indonesia		
7	Able to explain and describe the Trias Politica in the Republic of Indonesia	Definition of Trias Politica in the Republic of Indonesia		
8	Able to explain and describe State Institutions according to the 1945 Constitution of the Republic of Indonesia	Definition of State Institutions according to the 1945 Constitution of the Republic of Indonesia		
9		UTS		
10	Pancasila as National Ideology	<ol> <li>The definition of Pancasila as the national ideology</li> <li>The function of Pancasila as a national ideology</li> </ol>		





		The process of forming Paneasila as a national idealogy	
11	Anothen ideale any that is devialening in the world	Another definition of idealagy that daysland in the world	
11	Another ideology that is developing in the world	Another definition of ideology that developed in the world	
12	Pancasila and Human Rights	Definition of Pancasila and Human Rights	
13		Quiz 2	
14	Implementation of human rights in the 1945 Constitution of the	1)Definition of the implementation of human rights in the 1945	
	Republic of Indonesia	Constitution of the Republic of Indonesia	
		2)Characteristics of the Implementation of Human Rights in the 1945	
		Constitution of the Republic of Indonesia	
15	Corruption Crime	Definition of Corruption Crime	
		-Characteristics of Corruption	
16	Pancasila as the Development Paradigm	Definition of Pancasila as a Development Paradigm	
17		UAS	
ΓΟΤΑ	L WEIGHT		100%











The results of the assignment, in the form of answers accompanied by a description of the opinion of each student and their fields, are stored in PDF format and collected via LMS in				
weekly assignment sessions with the file name assignment1-nim-nama mhs.pdf				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
a) Entity description and description (50%)				
• Able to speak and express opinions correctly : 100				
• Able to speak and argue correctly : 80				
• Able to speak and express opinions correctly : 70				
• Able to speak and express opinions correctly : 50				
• Don't speak and don't think : 40				
b) Attribute description and description (50%)				
• Able to describe 20 – 25 attributes correctly : 100				
• Able to describe 13-19 attributes correctly : 80				
• Able to describe 7 -12 attributes correctly : 70				
• Able to describe 1-6 attributes correctly : 50				
• No correct attribute : 40				
SCHEDULE AND TIME OF IMPLEMENTATION				
The first week with a duration of processing time of 1x50'				
ETC				
-				
REFERENCES				





LUNIX NEGERY 44	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE	Communication and Organizational Science					
CODE	RTI211001       WEIGHT (credits) / hour       2 credits/ 2 hours       SEMESTER       1					
SUPPORTING	Widaningsih, S.Psi, SH, MH					
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
Evaluation of material 1-7						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand t	he material in chapters 1-7					
DESCRIPTION						
Answer the UTS questions prov	ded					
WORKING METHOD						
On line						
OUTER FORMAT						
UTS student answers						
<b>INDICATORS, CRITERIA A</b>	ND WEIGHT ASSESSMENT					
(indicator)	: 100%					
The UTS assessment weight is 2	0% of 100% of the assessment for this course					
<b>IMPLEMENTATION SCHEI</b>	ULE					
9th week	2 hours					
<b>OTHERS REQUIRED:</b>						
REFERENCES						
Pancasila Teaching Module						
Supporters:						
1) Sri Hudiarini, et al, Pancasi	a Education in the Historical and State Administration Perspective of the Republic of Indonesia Revised Edition, Aditya Media Publishing, 2016,					
Yogyakarta	Yogyakarta					
2) Muhammad Noor Syam, Tr	anslation of Pancasila Philosophy in Legal Philosophy (As the Foundation for Development of the National Legal System), Pancasila Laboratory, State					
University of Malang, 2000	Malang					





towin NEGE AT A T	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT				
ASSESSMENT METHOD					
	ASSESSMENT METHOD				
SUBJE	Communication and Organizational Science				
CODE	K11211001     WEIGHT (credits) / nour     2 credits/ 2 nours     SEMESTER     1				
LECTURER	Widaningsin, S.Psi, SH, MH				
ASSESSMENT FORMS					
UAS					
ASSESSMENT TITLE					
Evaluation of material 1-16					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students are able to understand t	he material in chapters 1-16				
DESCRIPTION					
Answer the UAS questions prov	ded				
WORKING METHOD					
On line					
OUTER FORMAT					
UAS student answers					
<b>INDICATORS, CRITERIA A</b>	ND WEIGHT ASSESSMENT				
(indicator)	: 100%				
The UTS assessment weight is 2	0% of 100% of the assessment for this course				
<b>IMPLEMENTATION SCHED</b>	ULE				
17th week	2 hours				
<b>OTHERS REQUIRED:</b>					
REFERENCES					
Pancasila Teaching Module					
Supporters:					
<ol> <li>Sri Hudiarini, et al, Pancasila Education in the Historical and State Administration Perspective of the Republic of Indonesia Revised Edition, Aditya Media Publishing, 2016, Yogyakarta</li> </ol>					
2) Muhammad Noor Syam, Tr	anslation of Pancasila Philosophy in Legal Philosophy (As the Foundation for Development of the National Legal System), Pancasila Laboratory, State				
University of Malang, 2000	Malang				





## IT concept

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students understand the concept of Information Technology</li> <li>Students can know the function and utilization of information technology</li> <li>Students can know the grouping of information technology</li> <li>Students can find out the building components of IT</li> <li>Students can know the basic role of IT</li> </ul>	<ul> <li>Information Technology Concept</li> <li>Functions and utilization of Information Technology</li> <li>Information technology grouping</li> <li>IT building components</li> <li>The basic role of IT</li> <li>Information Technology Trends</li> </ul>	<ul> <li>Task 1: summarize information technology review</li> <li>Quiz 1 (6 questions)</li> <li>UTS (6 questions)</li> <li>UAS (8 questions)</li> </ul>	Task 1: 2% Task 2: 2% Task 3: 2% Group discussion : 8% Quiz 1: 1 2 % UTS: 2 0 %
2	<ul> <li>Students understand about Technological Innovation</li> <li>Students know the difference between information system innovation and Modern Information Technology</li> <li>Students can understand examples of information system innovation and Modern Information Technology</li> </ul>	<ul> <li>Technology Innovation</li> <li>Differences between information system innovation and modern information technology</li> <li>Examples of information system innovation and modern information technology</li> </ul>	<ul> <li>Group discussion related to 2020 modern era IT innovation</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (8 questions)</li> </ul>	
3	<ul> <li>Students can know the meaning of science and technology</li> <li>Students can find out the development of science and technology</li> <li>Students can find out the development of science and technology in the field of education</li> <li>Students can find out the impact caused by the influence of science and technology and find solutions</li> </ul>	<ul> <li>Definition of science and technology</li> <li>Development of science and technology</li> <li>The development of science and technology in the field of education</li> <li>The influence of science and technology and its solutions</li> </ul>	<ul> <li>Group discussions related to the topic of the world of IT in science and technology</li> <li>Quiz 1 (5 questions)</li> <li>UTS (7 questions)</li> <li>UAS (8 questions)</li> </ul>	





4	<ul> <li>Students can know the meaning of Ethics in the use of IT Technology</li> <li>Students can understand and explain the types of IT ethical issues</li> <li>Students can know the role of ethics in the IT field</li> </ul>	<ul> <li>Definition of Ethics</li> <li>Use of Ethics in IT technology</li> <li>Types of IT ethical issues</li> <li>The Role of Ethics in IT</li> <li>Professional Ethics and responsibilities of the IT profession</li> </ul>	<ul> <li>Group discussion on the topic of international standards of ethics for the IT profession</li> <li>Quiz 1 (4 questions)</li> <li>UTS (8 questions)</li> <li>UAS</li> </ul>
5		Quiz 1	
6	<ul> <li>Students know the development of ICT</li> <li>Students know about the benefits of ICT and its application in various sectors</li> <li>Students can know the difference between ICT and ICT</li> <li>Students can find out the influence of ICT in organizations</li> </ul>	<ul> <li>Definition of ICT</li> <li>ICT development</li> <li>The benefits of ICT and its application</li> <li>The difference between ICT and ICT</li> </ul>	<ul> <li>Task 2: summarize the review of ICT developments</li> <li>UTS (7 questions)</li> <li>UAS (7 questions)</li> </ul>
7	• Students understand the concept of computer systems and their components	<ul> <li>Computer System Concept</li> <li>Computer Structure</li> <li>I/O devices</li> <li>Interconnection between components</li> <li>Register</li> <li>Memory</li> <li>Processor (CPU)</li> <li>CU/ Control Unit</li> <li>PESTLE</li> <li>BUS</li> </ul>	<ul> <li>Task 3: summarize the concept of a computer system and review computer components on each PC/laptop you have</li> <li>UTS (7 questions)</li> <li>UAS (7 questions)</li> </ul>
8	<ul> <li>Students understand the concept of computer systems</li> <li>Students can find out about computer system architecture</li> </ul>	<ul> <li>Computer system elements</li> <li>Computer system architecture</li> <li>Computer system components</li> </ul>	<ul> <li>Group discussions related to the topic of computer architecture on computers that are owned</li> <li>UTS (7 questions)</li> <li>UAS (7 questions)</li> </ul>
9		UTS	





10	• Students understand the concept of Data Representation	<ul> <li>Definition of Data representation</li> <li>Number System</li> <li>Arithmetic</li> <li>Type data type</li> <li>Number Theory</li> <li>Number Conversion</li> <li>Data Presentation</li> </ul>	<ul> <li>Task 4: Work on sample data representation questions</li> <li>Quiz 2 (10 questions)</li> <li>UAS (7 questions)</li> </ul>	Task 4: 2% Task 5: 2% Task 6: 2% Group Discussion : 6% Quiz 2: 1 2 % U A S: 30 %
11	• Students understand the concept of Boolean Algebra	<ul> <li>Basic Logic Operations</li> <li>Logic Operations and Logic Gates</li> <li>Boolean expression</li> <li>Laws of Boolean Algebra</li> <li>Boolean Functions</li> <li>Boolean Algebra Application</li> </ul>	<ul> <li>Task 5: work on boolean algebra examples</li> <li>Quiz 2 (10 questions)</li> <li>UAS (7 questions)</li> </ul>	
12	• Students understand the concept of Flowchart	<ul> <li>Flowchart concept</li> <li>Types of Flowcharts</li> <li>Flowchart Symbols</li> <li>Case studies in the application of flowcharts</li> </ul>	<ul> <li>Task 6: work on flowchart sample questions</li> <li>UAS (7 questions</li> </ul>	
13 1 4	Students understand the concept of Computer Networks and the Internet	Quiz 2• Computer Network Concept• Internet concept and understanding• Types of computer networks• Internet and Intranets• Network topology• Network device	<ul> <li>Group discussion related to the topic of computer network devices</li> <li>UAS (7 questions)</li> </ul>	
1 5	• Students understand the concept of IT applications	<ul> <li>IT Application Concept</li> <li>Types of IT applications</li> <li>The function and role of IT in everyday life and the company</li> </ul>	<ul> <li>Group discussions cover the topic of IT applications</li> <li>UAS (7 questions)</li> </ul>	
16	• Students get to know Certification in the IT Field	<ul><li>Definition of certification</li><li>Types of IT field certification</li></ul>	<ul> <li>Group discussion related to the topic of certifications in the IT field</li> <li>UAS (7 questions)</li> </ul>	





17	UAS	
	TOTAL WEIGHT	100%





A CONTRACT OF THE OF TH	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJECT	Information Techno	logy Concept				
CODE	RTI	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	1	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz material 1-4						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can understand the con-	cept of information to	chnology				
Students can understand technol	ogical innovation and	information systems				
Students can understand the deve	elopment of science a	and technology and its impact				
Students can understand ethics in	n the use of informati	on technology				
DESCRIPTION						
4. Answering Quiz questions re	elated to the concept	of information technology, tec	hnological innovation and	d information systems, science	e and technology development and its impacts,	
and ethics in the use of infor	mation technology					
WORKING METHOD						
• The questions are don	e through e-learning	ms.polinema.ac.id				
• Quiz done in 60 minut	tes					
OUTER FORMAT						
• Job Object: Quiz						
Outcome Form: student Quiz answers						
IMPLEMENTATION SCHED	DULE					
5th week			60 minutes			
<b>OTHERS REQUIRED:</b>						





### REFERENCES

- •
- Glen J. Coulthard, 2012, Computing Now, McGraw-Hill Book. Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition, McGraw-Hill. ٠





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	ASSESSMENT METHOD							
SUBJECT	Information Technol	ogy Concept						
CODE	RTI	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	1			
SUPPORTING								
LECTURER								
ASSESSMENT FORMS								
Quiz 2								
ASSESSMENT TILLE								
SUB COURSE LEADNING A	CHIFVEMENTS							
Students can understand the con	cent of data represents	ation						
Students can understand the con	cept of Boolean algeb	ra						
Students can understand the con	cept of flowcharts							
DESCRIPTION	-							
Answer Quiz questions related t	o the concept of data r	epresentation, Boolean algeb	ra, and flowcharts					
WORKING METHOD								
The questions are done	through e-learning lm	s.polinema.ac.id						
• Quiz done in 60 minute	es	-						
OUTER FORMAT								
E. Job Object: Quiz								
F. Outcome Form: student Qui	z answers							
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT								
Conformity of answers	: 100%							
Quiz 1 assessment weight is 129	% of 100% assessment	of this course						
<b>IMPLEMENTATION SCHEI</b>	DULE							
13th week			60 minutes					
<b>OTHERS REQUIRED:</b>								





### REFERENCES

- 1. Glen J. Coulthard, 2012, Computing Now, McGraw-Hill Book.
- 2. Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition, McGraw-Hill.







CODE	RTI	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	1
SUPPORTING					
LECTURER					
ASSESSMENT FORMS					
Midterm exam					
ASSESSMENT TITLE					
UTS material 1-8					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students can understand the con	cept of information to	echnology			
Students can understand technol	ogical innovation and	l information systems			
Students can understand the dev	elopment of science a	and technology and its impact			
Students can understand ethics i	n the use of informati	on technology			
Students can find out the develo	pment of ICT				
Students understand the concept	of computer systems	and their components			
Students understand the architec	ture of computer syst	ems			
DESCRIPTION					
Answer UTS questions related to	o the concept of infor	mation technology			
WORKING METHOD					
• The questions are done	through e-learning lr	ns.polinema.ac.id			
• UTS is done in 60 minu	ıtes				
OUTER FORMAT					
<ul> <li>Work Object: UTS</li> </ul>					
Outcome Form: UTS st	udent answers				
INDICATORS, CRITERIA A	ND WEIGHT ASSE	CSSMENT			
Conformity of answers	: 100%				
The UTS assessment weight is 2	20% of 100% of the a	ssessment for this course			
IMPLEMENTATION SCHEI	DULE				
9th week			60 minutes		
<b>OTHERS REQUIRED:</b>					
REFERENCES					





- Glen J. Coulthard, 2012, Computing Now, McGraw-Hill Book.
- Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practical Introduction to Computer & Communications, 6th Edition, McGraw-Hill.





SUMIN NEGERI OFT	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASS	ESSMENT METHOD			
SUBJECT	Information Techno	ology Concept	-	_		
CODE	RTI	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	1	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Final exams						
ASSESSMENT TILLE						
SUB COUDSE LEADNING A	CHIEVEMENTS					
SUB COURSE LEARNING A	cont of information t	achnology				
Students can understand the con	ogical innovation and	t information systems				
Students can understand the dev	elopment of science	and technology and its impact				
Students can understand ethics i	n the use of informat	ion technology				
Students can find out the develo	pment of ICT					
Students understand the concept	of computer systems	s and their components				
Students understand the architec	ture of computer syst	tems				
Students can understand the con	cept of data represen	tation				
Students can understand the con	cept of Boolean alge	bra				
Students understand the concent	of computer network	is and the internet				
Students understand the concept	Students understand the concept of IT applications					
Students get to know certification in the field of information technology						
DESCRIPTION						
Answer UAS questions related t	o the concept of info	rmation technology				
WORKING METHOD	-					
The questions are done     UTS is done in 60 min	through e-learning la	ns.polinema.ac.id				
OUTER FORMAT						
<b>UUTERTURNAT</b>						





Work Object: UAS	
Outcome Form: student UAS answers	
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT	
Conformity of answers : 100%	
The UAS assessment weight is 30% of 100% of the assessment for this course	
IMPLEMENTATION SCHEDULE	
17th week	60 minutes
OTHERS REQUIRED:	
REFERENCES	
1. Glen J. Coulthard, 2012, Computing Now, McGraw-Hill Book.	
2. Brian Williams and Stacey Sawyer, 2009, Using Information Technology: A Practic	cal Introduction to Computer & Communications, 6th Edition, McGraw-Hill.

#### Algorithms and Data Structures

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students understand and recall the basic	• Election	Quiz 1: 24 questions	Quiz 1: 10 %
	concepts of programming	• loop	Quiz 2: 23 questions	UTS: 30 %
		Arrays	UTS: 35 questions	
		Function	UAS: 41 questions	
2	• Students are able to understand the	<ul> <li>object concept</li> </ul>	Quiz 1: 24 questions	
	concept of object	• class, attribute and method declarations	Quiz 2: 23 questions	
	• students are able to declare classes,	• instantiation	UTS: 35 questions	
	attributes and methods	• access the attributes and methods of an	UAS: 41 questions	
	• Students are able to create objects	object		
	(instantiation)	• constructor		
	• students are able to access the	class diagrams		
	attributes and methods of an object			
	• student is able to call the constructor			





3	<ul> <li>students understand the concept of objects and write them in the form of class diagrams</li> <li>Students are able to make logic about arrays in Java</li> <li>Students are able to apply the creation of an array of objects</li> </ul>	<ul> <li>Declaring and instantiating Arrays in Java</li> <li>Declare and instantiate the Java language Array of object variables</li> <li>Make an assignment Array of objects</li> </ul>	Quiz 1: 24 questions Quiz 2: 23 questions UTS: 35 questions UAS: 41 questions	-
		• Displays an Array of objects		
4		Quiz 1	•	1
5	• Students are able to understand the concepts of brute force and divide-conquer algorithms Students are able to make flowcharts of brute force and divide-conquer algorithms	<ul> <li>Understanding the Brute force Algorithm</li> <li>Divide-conquer algorithm</li> <li>Big(O) Complexity Algorithm</li> <li>Big(O) notation calculation</li> </ul>	Quiz 1: 24 questions Quiz 2: 23 questions UTS: 35 questions UAS: 41 questions	
6	<ul> <li>Students understand the concepts of sorting</li> <li>Students understand the difference between bubble sort, selection sort, and insertion sort</li> <li>Students are able to make flowcharts of sorting algorithms</li> </ul>	<ul> <li>Definition of Sorting</li> <li>Bubble Sort Algorithm</li> <li>Selection Sort Algorithm</li> <li>Insertion Sort Algorithm</li> </ul>	Quiz 1: 24 questions Quiz 2: 23 questions UTS: 35 questions UAS: 41 questions	
7	<ul> <li>Students understand the concept of searching</li> <li>Students understand the concept of sequential and binary search</li> <li>Students can simulate manual searching using sequential and binary search algorithms</li> </ul>	<ul> <li>Sequential and Binary Search</li> <li>Enrichment : Merge Sort</li> </ul>	Quiz 1: 24 questions Quiz 2: 23 questions UTS: 35 questions UAS: 41 questions	
8		UTS		
9	<ul> <li>Students understand the basic concepts of the basic structure of Stack</li> <li>Students understand the operations on Stack</li> <li>Students understand implementing Stack for Postfix Expressions</li> </ul>	<ul> <li>Stack Data Structure Concept</li> <li>Operations on the Stack Postfix Expressions</li> </ul>	Quiz 1: 24 questions Quiz 2: 23 questions UTS: 35 questions UAS: 41 questions	Quiz 2: 10 % U A S: 30 %





10	• Students understand the basic concept	Queue Data Structure Concept	Quiz 1: 24 questions	
	of the basic structure of the Queue	Queue operations	Quiz 2: 23 questions	
	• Students understand the operations on		UTS: 35 questions	
	the Queue		UAS: 41 questions	
			-	
11	Students understand the Linked List	Linked list	Quiz 1: 24 questions	
	method for data distribution between two		Quiz 2: 23 questions	
	links		UTS: 35 questions	
			UAS: 41 questions	
12	Students understand the Double Linked	Double linked list		
	List method for data distribution between			
	two links			
13		Quiz 2		
14	• Students understand the concept of a	• tree	Quiz 1: 24 questions	
	tree in general	BinarySearch	Quiz 2: 23 questions	
	• Understand understanding the		UTS: 35 questions	
	application of binary trees		UAS: 41 questions	
	• Students understand the concept of			
	Binary Search Tree			
	Students understand the stages of			
	implementing the Binary Search Tree			
15	• Students are able to make Graph	Graph	Quiz 1: 24 questions	
	algorithms in General		Quiz 2: 23 questions	
	Students are able to apply the Graph		UTS: 35 questions	
	algorithm to the program		UAS: 41 questions	
16	Students understand the collection classes	Best practices collection	Quiz 1: 24 questions	
	and the functions that have been provided		Quiz 2: 23 questions	
	in completing the case study		UTS: 35 questions	
			UAS: 41 questions	
17		UAS		
		TOTAL WEIGHT		100%





IK NEGER	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT						
5600 244	INFORMATION I	ECHNOLOGY DEPARTM	IEN I CINEEDINC				
	STUDY PROGRA	$\underline{\mathbf{M}} : \mathbf{D4} \text{ INFORVIATICS} \mathbf{EN}$	GINEEKING				
ASSESSIVENT METHOD							
SUBJE	Algorithms And Da	WEIGHT (and Pha) ( have	2/4	GEMEGTED			
CODE	K11212008	WEIGHT (credits) / nour	2/4	SEMESTER	2		
SUPPORTING LECTUDED	vivin Ayu Lestari, S	S.Pd., M.Kom					
LECTURER ASSESSMENT FORMS							
ASSESSMENT FORMS							
Quiz I							
ASSESSMENT IIILE							
Quiz 1: 24 questions	CHIEVEMENTO						
SUB COURSE LEARNING A	CHIEVENIENIS						
Understanding meeting materi	ai 1-5						
DESCRIPTION							
Answer the assignment question	s provided.						
WORKING METHOD	<u>C1</u>						
Problems are done within 4 hour	s of lessons						
Student answer							
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT					
Conformity of answers	: 100%						
TT1	61000/ 64						
The assessment weight is 10% of	t 100% of the assessm	nent for this course					
IMPLEMENTATION SCHED	ULE		4.1 01				
4th week 4 hours of lessons							
OTHERS REQUIRED:							
REFERENCES							
REFERENCES	• • • • • • • •						
1. Goodrich, MT, Tamassia, R	., & Goldwasser, ME	1 2014. Data Structures & Alg	orithms in Java 6th Edition	n. Wiley Global Education			
2. Kamadhani, C. 2015. Basic	Algorithm and Data	Structure with Java Language.	Y ogyakarta: Andi Publish	ner			
<ol> <li>Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher</li> <li>Harizzanta, D. 2007. Data Structure, Dan Junea, Information</li> </ol>							





IN NE GERI	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT							
See ay	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING					
	ASSESSMENT METHOD							
SUBJE	UBJE							
CODE	RTI212008	WEIGHT (credits) / hour	2/4	SEMESTER	2			
SUPPORTING	Vivin Ayu Lestari, S	S.Pd., M.Kom						
LECTURER	<b>,</b>							
ASSESSMENT FORMS								
Quiz 2								
ASSESSMENT TITLE								
Quiz 1: 23 questions								
SUB COURSE LEARNING A	CHIEVEMENTS							
Understand meeting material 9	9-12							
DESCRIPTION								
Answer the assignment question	s provided.							
WORKING METHOD								
Problems are done within 4 hour	s of lessons							
OUTER FORMAT								
Student answer								
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT						
Conformity of answers	: 100%							
The assessment weight is 10% of	f 100% of the assessn	nent for this course						
IMPLEMENTATION SCHED	DULE							
13th week	13th week 4 hours of lessons							
OTHERS REQUIRED:								
REFERENCES								
<b>KEFERENCES</b>								
1. Goodrich, M1, Tamassi 2. Damadhani C 2015 Daris	a, K., & Goldwasser,	MH 2014. Data Structures &	Algorithms in Java 6th Ed	iition. Wiley Global Educat	lon			
2. Kamadnani, C. 2015. Basic	Algorithm and Data	Structure with Java Language.	i ogyakarta: Andi Publish	ier				
5. Nugrono, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher								





WIK NE GERI	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT							
See any	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING					
	ASSESSMENT METHOD							
SUBJE	UBJE Algorithms And Data Structures							
CODE	RTI212008	WEIGHT (credits) / hour	2/4	SEMESTER	2			
SUPPORTING	Vivin Ayu Lestari, S	S.Pd., M.Kom						
LECTURER	•							
ASSESSMENT FORMS								
UTS								
ASSESSMENT TITLE								
UTS: 35 questions								
SUB COURSE LEARNING A	CHIEVEMENTS							
Understanding meeting materi	al 1-8							
DESCRIPTION								
Answer the assignment question	s provided.							
WORKING METHOD								
Problems are done within 4 hour	s of lessons							
OUTER FORMAT								
Student answer								
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT						
Conformity of answers	: 100%							
<b>T</b>	01000/ 01							
The assessment weight is 30% o	t 100% of the assessm	nent for this course						
IMPLEMENTATION SCHEL	OULE		4.1					
9th week	9th week 4 hours of lessons							
OTHERS REQUIRED:								
DEEEDENCES								
1 Goodrich MT Tamasa	a R & Goldwasser	MH 2014 Data Structures &	Algorithms in Java 6th Ed	lition Wiley Global Educati	on			
2 Ramadhani C 2015 Rasic	Algorithm and Data	Structure with Java Language	Yogyakarta Andi Publish	nuon. Whey Olobal Education				
3 Nugroho A 2008 Algorith	ms and Data Structur	es in Iava Language Voovaka	arta: Andi Publisher	101				
Trugtono, M. 2000. Algorithms and Data Subcluster may Language. Fogyakata. And Futoninet								





ANIK NE GERI	MALANG STATE	POLYTECHNIC ECHNOLOGY DEPARTM	IENT				
and the second second	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING				
ASSESSMENT METHOD							
SUBJE	JE Algorithms And Data Structures						
CODE	RTI212008	WEIGHT (credits) / hour	2/4	SEMESTER	2		
SUPPORTING	Vivin Ayu Lestari, S	S.Pd., M.Kom					
LECTURER	•						
ASSESSMENT FORMS							
UAS							
ASSESSMENT TITLE							
UAS: 41 questions							
SUB COURSE LEARNING A	CHIEVEMENTS						
Understand meeting material	-16						
DESCRIPTION							
Answer the assignment question	s provided.						
WORKING METHOD							
Problems are done within 4 hour	Problems are done within 4 hours of lessons						
OUTER FORMAT							
Student answer							
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT					
Conformity of answers : 100%							
The assessment weight is 30% of 100% of the assessment for this course							
IMPLEMENTATION SCHEDULE							
17th week 4 hours of lessons							
OTHERS REQUIRED:							
REFERENCES							
1. Goodrich, M1, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java 6th Edition. Wiley Global Education							
<ol> <li>Kamadnani, U. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: Andi Publisher</li> <li>Numerica: A 2008. Algorithms and Data Structure in Java Language. Yogyakarta: Andi Publisher</li> </ol>							
5. Nugrono, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher							





### **Database Practicum**

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	• Students <b>are able to explain</b> the concept of	- Prepare sample data <i>spreadsheets</i>	Quiz 1: 11 questions	Quiz 1: 20 %
	presenting data based on certain	Selecting data by utilizing the available functions	UTS: 1 question	UTS: 30 %
	Students are able to explain and apply data		UAS: 40 questions	UAS: 30%
	presentation functions on <i>spreadsheet</i> -based data			
	sets (C3)			
2	• Students are able to <b>design</b> databases through	- Designing the database according to the	Quiz 1: 11 questions	
	the design stages (C3)	design stages	UTS: 1 question	
	Students are able <b>to apply</b> the results of database	Create ER Diagrams	UAS: 40 questions	
	design into ER diagrams manually (C3)			
3	Students are able to <b>explain</b> and further <b>apply</b>	Making ER Diagrams with CASE Tools	Quiz 1: 11 questions	•
	ERD and its relationship to data modeling,		UTS: 1 question	
	ERD variations, and tools that can be used to		UAS: 40 questions	
	make ERD			
4		Quiz 1		
5	Students are able <b>to explain</b> the relational model	Create CDM and PDM with Sybase power	Quiz 1: 11 questions	
	database described by CDM and PDM (C2)	designer tools	UTS: 1 question	
(			UAS: 40 questions	-
0	• Students are able to <b>design</b> databases through the design stages (C3)	- Designing the database according to the	Quiz 1: 11 questions	
	Students are able to apply the results of database	Create FR Diagrams	UAS: 40 questions	
	design into FR diagrams manually (C3)		UAS. 40 questions	
7	Students are able to explain further about ERD	Making ER Diagrams with CASE Tools	Quiz 1: 11 questions	
	and its relationship to data modeling, ERD		UTS: 1 question	
	variations, and tools that can be used to make ERD		UAS: 40 questions	
	(C2)			-
8				
9	• Students are able to explain the concept of	- Prepare sample data <i>spreadsheets</i>	Quiz 1: 11 questions	Quiz 1: 20 %
	normalizing relational schemas into the	Perform normalization according to the	UIS: I question	UIS: 30 %
	$\begin{array}{c} \text{desired form (U2)} \\ \text{Students are able to avalate the characteristics of} \end{array}$	stages of normalization	UAS: 40 questions	UAS: 30%
	the stages of normalization 1NE to 3NE (C2)			
	the stages of normalization five to sive (C2)			





10	• Students are able <b>to explain</b> the characteristics of the stages of normalization 4NF, 5NF and BCNF <b>(C2)</b>	Perform normalization according to the stages of normalization	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
11	<ul> <li>Students are able to explain the basics of MySQL (C2)</li> <li>Students are able to create databases and tables by applying DDL (C3)</li> <li>Students are able to explain and apply the use of commands to define database attributes, tables, fields, as well as limitations on an attribute and relationships between tables (C2) (C3)</li> </ul>	<ul> <li>Install mysql</li> <li>Create a database</li> <li>Performs Data Definition Language (DDL)</li> <li>Create, Alter, Drop commands</li> </ul>	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
12	Students are able to <b>explain</b> and <b>apply</b> the use of DML commands in MySQL ( <b>C2</b> ) ( <b>C3</b> )	Make use of the INSERT, UPDATE, DELETE SQL statement commands	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
13		Quiz 2				
14	Students are able to <b>explain</b> and <b>apply</b> the use of SQL SELECT statements with various clauses (C2) (C3)	Make use of the SQL Select command	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
15	<ul> <li>Students are able to explain the connectedness of entities in the database</li> <li>Students explain the types of data retrieval operations in several entities (C2)</li> <li>Students are able to complete <i>retrieval</i> cases involving more than one entity (C3)</li> </ul>	- Create a database with more than 1 table Make use of the Inner Join and Outer Join commands	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
16	<ul> <li>Students are able to explain and implement entity connectedness in the database</li> <li>Students are able to explain and implement types of data retrieval operations across multiple entities (C2) (C3)</li> <li><i>retrieval</i> cases involving more than one entity</li> </ul>	<ul> <li>Create a database with more than 1 table Make use of the Inner Join and Outer Join commands</li> </ul>	Quiz 1: 11 questions UTS: 1 question UAS: 40 questions			
17	17 UAS					
		TOTAL WEIGHT		100%		





	MALANG STATE POLYTECHNIC					
NHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
LUC ALL	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE	DATABASE PRACTICUM					
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	Muhammad Shulha	n Khairy, S.Kom, M.Kom				
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 2: 11 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand r	material 1 - 3					
DESCRIPTION						
Answer the quiz questions provide	ded.					
WORKING METHOD						
Problems are done within 4 hour	rs of lessons					
OUTER FORMAT						
Student quiz answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	Conformity of answers : 100%					
The assessment weight is 20% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
4th week	150 minutes					
OTHERS REQUIRED:						
REFERENCES						
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.						
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.						





$\land$	MALANG STATE POLYTECHNIC						
KNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT						
The second secon	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
		ASSI	ESSMENT METHOD				
SUBJE	DATABASE PRACTICUM						
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2		
SUPPORTING	Muhammad Shulhar	n Khairy, S.Kom, M.Kom					
LECTURER							
ASSESSMENT FORMS							
UTS							
ASSESSMENT TITLE							
UTS: 1 question							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to understand r	naterial 1-8						
DESCRIPTION							
Answer the UTS questions provi	ded.						
WORKING METHOD							
The questions were done in 120	minutes						
OUTER FORMAT							
UTS student answers							
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT					
Conformity of answers : 100%							
The assessment weight is 30% of 100% of the assessment for this course							
IMPLEMENTATION SCHEDULE							
9th week	week 120 minutes						
OTHERS REQUIRED:							
REFERENCES							
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.							
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.							





$\land$	MALANG STATE POLYTECHNIC					
NHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
LUC ALL	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD						
SUBJE	DATABASE PRACTICUM					
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	Muhammad Shulha	n Khairy, S.Kom, M.Kom				
LECTURER						
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS: 40 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand t	he material from mee	etings 1-16				
DESCRIPTION						
Answer the assignment question	s provided.					
WORKING METHOD						
Problems are done within 2 hour	rs of lessons					
OUTER FORMAT						
UAS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	Conformity of answers : 100%					
The assessment weight is 35% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
17th week	h week 150 minutes					
OTHERS REQUIRED:						
REFERENCES						
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.						
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.						





#### Database

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Able to give examples of ICT products that use relational databases with clear and reliable reference sources [C2, A3]	<ul> <li>RPS and LECTURE CONTRACTS</li> <li>Basic Concept [1] p. 1-14</li> <li>Definition of Data and Database</li> <li>Use of data and databases</li> <li>Database characteristics</li> <li>Database Type</li> <li>Example of implementing the database</li> <li>Relational Database [1] p. 15-28</li> <li>Definition of Relational Database</li> <li>Components in relational databases</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	Quiz 1: 20 % UTS: 30 % UAS: 35%
2	Able to design databases using ER Diagrams based on the requirements given [C4,A3,P2]	<ul> <li>Data modeling [1] p. 29-36</li> <li>Data modeling concept</li> <li>Types and data modeling architecture</li> <li>Database design using ER Diagram [1] p. 58-92</li> <li>ER Versions and Components Diagram</li> <li>Data requirements</li> <li>Database design steps using ER Diagram</li> <li>Determination of Entity, attribute and relationship</li> <li>Determination of participant relationship</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	
3	Able to design databases using ER Diagrams based on the requirements given [C4,A3,P2]	<ul> <li>Data modeling [1] p. 29-36</li> <li>Data modeling concept</li> <li>Types and data modeling architecture</li> <li>Database design using ER Diagram [1] p. 58-92</li> <li>ER Versions and Components Diagram</li> <li>Data requirements</li> <li>Database design steps using ER Diagram</li> <li>Determination of Entity, attribute and relationship</li> <li>Determination of relationship cardinality Determination of participant relationship</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	
4		Quiz 1		




5	Be able to design a relational model using the ER Diagram mapping algorithm to the relational model [C4,A3,P2]	<ul> <li>ER Diagram Mapping Algorithm to the relational model [1] p. 93-105</li> <li>Mapping Entities</li> <li>Attribute Mapping</li> <li>Mapping Relationships</li> <li>Assessment of the suitability of the relational model with the data requirements</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	
6	Be able to design a relational model using the ER Diagram mapping algorithm to the relational model [C4,A3,P2]	<ul> <li>ER Diagram Mapping Algorithm to the relational model [1] p. 93-105</li> <li>Mapping Entities</li> <li>Attribute Mapping</li> <li>Mapping Relationships</li> <li>Assessment of the suitability of the relational model with the data requirements</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	
7	Able to design a relational model using the database normalization method based on the tables and data provided [C4,A3,P2]	<ul> <li>Database Normalization [1] p. 37-57</li> <li>Definition of normalization</li> <li>Purpose and benefits of normalization</li> <li>Database normalization stages</li> <li>Database normalization process [1] p. 37-57</li> <li>Formation of normal form 1 (1 NF)</li> <li>Formation of normal form 2 (2 NF)</li> <li>Formation of normal form 3 (3 NF) or BCNF</li> <li>Formation of normal form 4 (4 NF)</li> <li>Formation of normal form 5 (5 NF)</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	
8			-	
9	Able to design a relational model using the database normalization method based on the tables and data provided [C4,A3,P2]	<ul> <li>Database Normalization [1] p. 37-57</li> <li>Definition of normalization</li> <li>Purpose and benefits of normalization</li> <li>Database normalization stages</li> <li>Database normalization process [1] p. 37-57</li> <li>Formation of normal form 1 (1 NF)</li> <li>Formation of normal form 2 (2 NF)</li> <li>Formation of normal form 3 (3 NF) or BCNF</li> <li>Formation of normal form 4 (4 NF)</li> </ul>	Quiz 1: 11 questions UTS: 20 questions UAS: 40 questions	Quiz 1: 20 % UTS: 30 % UAS: 35%





		Formation of normal form 5 (5 NF)	
10	Able to write SQL-DDL commands to implement	Stages of Implementing Database	Quiz 1: 11 questions
	database design results and manage databases	- Create a database	UTS: 20 questions
	[C3,A3,P2]	- Create tables, attributes, primary keys, and	UAS: 40 questions
		foreign keys	
		SOL language	
		- Definition purpose benefits and types of	
		SOL language	
		SQL-DDL language	
		- Usage and commands in SQL-DDL	
		- CREATE command	
		- ALTER command	
		DROP command	
11	Able to write SQL-DML commands to manage	Data Management in Database	Quiz 1: 11 questions
	data stored in the database [C3,A3,P2]	- Data addition	UTS: 20 questions
		- Data deletion	UAS: 40 questions
		- Data change	
		SOL-DML language	
		- Usage and commands in SOL-DML	
		- INSERT command	
		- DELETE command	
		- UPDATE command	
		WHERE clause	
12	Able to write SQL-DQL commands to display data	Data Queries	Quiz 1: 11 questions
	stored in database (query data) [C4,A3,P2]	- Data query process	UTS: 20 questions
			UAS: 40 questions
		SQL-DQL language	
		- Usage and commands in SQL-DQL	
		- SELECT command	
		- WHERE clause	
		- UKDEK BY clause	
		- GROUP BY clause	
		- Aggregation Functions (SUM, MIN, MAX,	
		HAVING colluges	
		- TIAVINO calluses	





13		Quiz 2	-		
14	Able to write SQL-DQL commands to display data	Data Queries	Quiz 1: 11 questions		
	stored in database (query data) [C4,A3,P2]	- Data query process	UTS: 20 questions		
			UAS: 40 questions		
		SQL-DQL language			
		<ul> <li>Usage and commands in SQL-DQL</li> </ul>			
		- SELECT command			
		- WHERE clause			
		- ORDER BY clause			
		- GROUP BY clause			
		- Aggregation Functions (SUM, MIN, MAX,			
		AVG)			
		- HAVING calluses			
15	Able to write SELECT commands to display data	SELECT command for multiple tables	Quiz 1: 11 questions		
	stored in multiple tables in database [C4,A3,P2]	<ul> <li>The JOIN command and its types</li> </ul>	UTS: 20 questions		
		- INNER JOIN	UAS: 40 questions		
		- OUTER JOINS			
		CROSS JOIN			
16	Able to write SELECT commands to display data	SELECT command for multiple tables	Quiz 1: 11 questions		
	stored in multiple tables in database [C4,A3,P2]	<ul> <li>The JOIN command and its types</li> </ul>	UTS: 20 questions		
		- INNER JOIN	UAS: 40 questions		
		- OUTER JOINS			
		CROSS JOIN			
17	UAS				
		TOTAL WEIGHT		1(	





$\land$	MALANG STATE	POLYTECHNIC				
ANNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
ST ST THE	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJE	DATABASE					
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	Muhammad Shulhar	n Khairy, S.Kom, M.Kom				
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 2: 11 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand r	naterial 1 - 3					
DESCRIPTION						
Answer the quiz questions provi	ded.					
WORKING METHOD						
Problems are done within 4 hour	rs of lessons					
OUTER FORMAT						
Student quiz answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 20% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
th week 150 minutes						
<b>OTHERS REQUIRED:</b>	OTHERS REQUIRED:					
REFERENCES						
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.						
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.						





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NHIK NE GERIA	<b>INFORMATION</b>	<b>FECHNOLOGY DEPARTM</b>	ENT			
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJE						
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	Muhammad Shulha	n Khairy, S.Kom, M.Kom				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS: 20 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand r	naterial 1-8					
DESCRIPTION						
Answer the UTS questions provi	ded.					
WORKING METHOD						
The questions are done within 30	) minutes					
OUTER FORMAT						
UTS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 30% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
9th week	week 30 minutes					
OTHERS REQUIRED:						
REFERENCES						
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.						
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.						





$\land$	MALANG STATE POLYTECHNIC					
KHIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
The second secon	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJE	DATABASE					
CODE	RTI212006	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	Muhammad Shulha	n Khairy, S.Kom, M.Kom				
LECTURER						
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS: 40 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand t	he material from mee	etings 1-16				
DESCRIPTION						
Answer the assignment question	s provided.					
WORKING METHOD						
Problems are done within 2 hour	rs of lessons					
OUTER FORMAT						
UAS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 35% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
150 minutes						
OTHERS REQUIRED:						
REFERENCES						
1. Puspitasari, D. and Hani'ah, M., 2019, Easy Ways to Design a Relational Database, Press Polyema.						
2. Fathansyah, 2015, Basic Data Base, Bandung Informatics.						





#### Mathematics 2

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to understand the	Definition of Sets, Presentation of Sets,	Quiz 1: 20 questions	Quiz 1: 7.5 %
	concept of the type of set	Types of Sets	Quiz 2: 20 questions	UTS: 30 %
			UTS: 20 questions	Task 1: 10%
			UAS: 40 questions	
2	Students are able to understand the	Set Operations (Incision, Union, Difference,	Quiz 1: 20 questions	
	concept of the type of set	Complement, Symmetrical Difference and	Quiz 2: 20 questions	
	1 1	Composition)	UTS: 20 questions	
		1 /	UAS: 40 questions	
3	Students are able to understand the	The definition of a relation, the relation	Quiz 1: 20 questions	
	concept of Relations	symbol, defines the result area of the relation	Quiz 2: 20 questions	
	L		UTS: 20 questions	
			UAS: 40 questions	
4		Quiz 1		
5	Students are able to understand the concept	Function definition, function symbol, define	Quiz 1: 20 questions	
	of function	function result area, relation and function	Quiz 2: 20 questions	
		differences	UTS: 20 questions	
			UAS: 40 questions	
6	Students are able to understand the	Definition of Matrix, Matrix Notation, Same	Quiz 1: 20 questions	
	concept of the Matrix	Matrix	Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
7	Students are able to understand the	Matrix Addition and Subtraction,	Quiz 1: 20 questions	
	concept of the Matrix	Matrix Multiplication, Matrix Transpose	Quiz 2: 20 questions	
	-		UTS: 20 questions	
			UAS: 40 questions	
8		UTS		
9	Students are able to understand the	determinant property, 2x2 matrix	Quiz 1: 20 questions	Quiz 2: 7.5 %
	concept of the Matrix	determinant, 2x2 matrix inverse	Quiz 2: 20 questions	U A S: 35 %
	-		UTS: 20 questions	Task 2: 10%
			UAS: 40 questions	
10	Students are able to understand the	Determinant with cofactors for a 3x3 Matrix	Quiz 1: 20 questions	
	concept of the Matrix		Quiz 2: 20 questions	
	_		UTS: 20 questions	
			UAS: 40 questions	





11	Students are able to understand the	inverse matrix 3x3	Quiz 1: 20 questions	
	concept of the Matrix		Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
12	Students are able to understand the	Gauss Seidel Method Algorithm	Quiz 1: 20 questions	
	concept of solving systems of linear		Quiz 2: 20 questions	
	equations using the Gauss Seidel method		UTS: 20 questions	
	1 8		UAS: 40 questions	
			Task 1: 10 questions	
13		Quiz 2		
14	Students are able to understand the	Gaussian Method Algorithm	Quiz 1: 20 questions	
	concept of solving systems of linear		Quiz 2: 20 questions	
	equations using the Gaussian method		UTS: 20 questions	
	1 0		UAS: 40 questions	
15	Students are able to understand the	Gauss- Jordan Method Algorithm	Quiz 1: 20 questions	
	concept of solving systems of linear		Quiz 2: 20 questions	
	equations using the Gauss-Jordan method		UTS: 20 questions	
			UAS: 40 questions	
16	Students are able to understand the	Table and Bisection Methods	Quiz 1: 20 questions	
	concept of solving non-linear equations		Quiz 2: 20 questions	
			UTS: 20 questions	
			UAS: 40 questions	
			Task 2: 10 questions	
17				
	•	TOTAL WEIGHT		100%





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stern Az	INFURMATION STUDY PDOCDA	IECHNOLOGY DEPARTN M - DA INFORMATICS FN				
		ASS	ESSMENT METHOD			
SUBJE	Mathematics 2					
CODE	RT1212002	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	(Name of Assignme	ent Lecturer)				
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 1: 20 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand	material 1-3					
DESCRIPTION						
Answer the quiz questions prov	ided.					
WORKING METHOD						
Problems are done within 2 hou	rs of lessons					
OUTER FORMAT						
Student quiz answers						
<b>INDICATORS, CRITERIA A</b>	ND WEIGHT ASSI	ESSMENT				
Conformity of answers	: 100%	)				
The assessment weight for Assi	gnment 1 is 7.5% of	00% of the assessment for thi	s course			
IMPLEMENTATION SCHEDULE						
4th week			150 minutes			
<b>OTHERS REQUIRED:</b>						
REFERENCES	REFERENCES					
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013						
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.						





$\land$	MALANG STATE POLYTECHNIC					
ANNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASSI	ESSMENT METHOD			
SUBJE	Mathematics 2					
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	(Name of Assignme	nt Lecturer)				
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2: 20 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand r	naterial 8 - 12					
DESCRIPTION						
Answer the quiz questions provi	ded.					
WORKING METHOD						
Problems are done within 2 hour	s of lessons					
OUTER FORMAT						
Student quiz answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 7.5% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
13th week	th week 150 minutes					
OTHERS REQUIRED:						
REFERENCES						
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013						
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.						





$\wedge$	MALANG STATE POLYTECHNIC					
ANNIK NE GERIA	INFORMATION TECHNOLOGY DEPARTMENT					
ST ST THE	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING			
		ASSI	ESSMENT METHOD			
SUBJE	Mathematics 2					
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	(Name of Assignme	nt Lecturer)				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS: 20 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand a	naterial 1-8					
DESCRIPTION						
Answer the UTS questions provi	ided.					
WORKING METHOD						
Problems are done within 2 hour	rs of lessons					
OUTER FORMAT						
UTS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	SSMENT				
Conformity of answers	: 100%					
The assessment weight is 30% of 100% of the assessment for this course						
IMPLEMENTATION SCHEDULE						
9th week	2k 150 minutes					
OTHERS REQUIRED:						
REFERENCES						
1. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013						
2. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.						





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	(3) A A A A A A A A A A A A A A A A A A A					
		ASSI	ESSMENT METHOD			
SUBJE	Mathematics 2					
CODE	RTI212002	WEIGHT (credits) / hour	2/4	SEMESTER	2	
SUPPORTING	(Name of Assignme	ent Lecturer)				
LECTURER						
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS: 40 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand t	the material from me	etings 1-16				
DESCRIPTION						
Answer the assignment question	s provided.					
WORKING METHOD						
Problems are done within 2 hour	rs of lessons					
OUTER FORMAT						
UAS student answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT				
Conformity of answers	: 100%	)				
The assessment weight is 35% o	f 100% of the assess	nent for this course				
IMPLEMENTATION SCHEDULE						
17th week 150 minutes						
OTHERS REQUIRED:						
REFERENCES						
3. Stroud, KA and Dexter J., Engineering Mathematics, Palgrave Macmillan, 2013						
4. Munir, Rinaldi, "Discrete Mathematics Ed. 5th Revision", Informatics Bandung, 2012.						





## Software engineering

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to understand Software	- Able to understand the characteristics and	Quiz 1: 25 questions	Quiz 1: 10 %
	Concepts	- Able to understand Software category	UAS: 35 questions	013.30 /0
		- Able to understand the quality and life	orio. 55 questions	
		cycle of Software		
		- Able to understand Software process model		
		· · · · · · · · · · · · · · · · · · ·		
2	Students are able to understand the	- Be able to explain the meaning and	Quiz 1: 25 questions	
	concept of software process models	function of the software development cycle	UTS: 45 questions	
		- Able to understand the prototyping model	UAS: 35 questions	
		- able to understand the Linear Sequential		
		Model		
		- SDLC Process Model Waterfalls		
		- Increment Process Model		
		- Increment Model		
		- Able to understand the spiral model		
		- Able to understand RAD Models		
		- Able to understand the Incremental Model		
		- Able to understand the Spiral Model		
		Able to understand the Component		
2	Students are able to understand and	Assembly Model	Oviz 1, 25 questions	-
3	Students are able to understand and	- Able to understand the concept of systems	Quiz 1: 25 questions	
	explain systems engineering	A bla to arrate and understand information	UIS: 45 questions	
		- Able to create and understand information strategy planning	OAS. 55 questions	
		- Able to identify the needs of a system		
		- Able to model the architecture of a system		
		Able to analyze the specifications of a		
		system		
4		Quiz 1	•	
5	Context Diagrams And Data Flow Diagrams	- Able to understand the concept of software	Quiz 1: 25 questions	
		development in the form of a context	UTS: 45 questions	
		diagram	UAS: 35 questions	
		Able to understand the concept of software		
		development in the form of data flow		
		diagrams and their derivatives		





6	<ul> <li>Students can understand and make designs Entity Relationship Diagram (ERD) of a software concept</li> <li>Understand the basic principles of software design and implementation</li> <li>Knowing the main features of software for analysis modeling and</li> </ul>	Able to understand the principles and concepts of ERD design - UML software design principles and concepts - Introduction to Modeling with star UML/Power Designer	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
	<ul> <li>software design</li> <li>Make and know the analysis model and system design in UML notation for simple problems a</li> <li>Be able to make use case diagrams from a case study</li> </ul>	Understanding of making use case diagrams in a case		
8		UTS		
9	Students can understand and create sequence diagrams for designing software development	<ul> <li>Modeling introduction using star UML/Power Designer</li> <li>Sequence Diagram Components</li> </ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	Quiz 2: 10 % U A S: 30 %
10	<ul> <li>Students can understand and create a Candidate Class for designing software development</li> <li>Students can understand and create</li> <li>Interaction Diagrams for designing software development</li> </ul>	<ul> <li>Definition of Candidate Class and Interaction Diagram</li> <li>Create Candidate Class Create Interaction Diagrams</li> </ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
11	Students can understand and operate the Class Diagram model in software development	<ul><li>Definition of Class Diagrams</li><li>Create Class Diagrams</li></ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
12	<ul> <li>Students can understand and operate the State Transition Diagram model in software development</li> <li>Students can understand and operate the Activity Diagram model in software development</li> <li>Students can understand the concept of Refinement in software development</li> </ul>	<ul> <li>Definition of State Transition Diagrams</li> <li>Understanding Activity Diagrams</li> <li>Definition of Refinement in software development</li> <li>Create State Transition Diagrams</li> <li>Create Activity Diagrams</li> <li>Implement Refinements</li> </ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
13		Quiz 2		1
14	- Students can understand Component Diagrams in software development	- Understanding Component and deployment diagrams in software development	Quiz 1: 25 questions UTS: 45 questions	





	- Students can understand and create the concept of deployment diagrams	<ul><li>Create Component Diagrams</li><li>Create Deployment Diagrams</li></ul>	UAS: 35 questions	
15	Students can understand and make Object Oriented Analysis & Design	<ul> <li>Definition of Object &amp; Class</li> <li>Defining Classes</li> <li>Relations in Object inheritance</li> </ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
16	<ul> <li>Students can test software with the Whitebox &amp; Blackbox model</li> <li>Students can perform software testing in terms of integration, validation and system testing</li> </ul>	<ul> <li>Definition of software testing</li> <li>White box testing</li> <li>Blackbox testing</li> <li>Integration testing validation</li> </ul>	Quiz 1: 25 questions UTS: 45 questions UAS: 35 questions	
17		UAS	•	]
	100%			





ANIK NE GERI	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT					
ALC AND ALC	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE	Software engineering					
CODE	RTI212005 WEIGHT (credits) / hour 2/4 SEMESTER 2					
SUPPORTING	Eka Larasati Amalia, S.ST., MT.					
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2 does 25 soles						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand Jobsheet 9-11						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
<b>INDICATORS, CRITERIA A</b>	ND WEIGHT ASSESSMENT					
Conformity of answers	: 100%					
The assessment weight is 10% of	f 100% of the assessment for this course					
IMPLEMENTATION SCHEI	DULE					
12th week	4 X 50 "					
<b>OTHERS REQUIRED:</b>						
REFERENCES						
1. Ian Sommerville, Softwar	e Engineering, 6th edition, Addison-Wesley Pub Co., 2000.					
2. William R. King , 2015, F	lanning for Information Systems, Routledge.					
3. Harlan D. Mills, Richard	C. Linger, Alan R. Hevner, Principles of Information Systems Analysis and Design, Academic Press, 1990.					
4. Sprague, RH and McNurl	n, BC, Information Systems Management in Practice, 5th edition, Prentice-Hall, 2002.					
5. Ward, J et al., <i>Strategic P</i>	. Ward, J et al., Strategic Planning for Information Systems Practice, 2nd edition, Wiley, 1996					





MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT						
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE Software engineering						
CODE	RTI212005WEIGHT (credits) / hour2/4SEMESTER2					
SUPPORTING	Eka Larasati Amalia, S.ST., MT.					
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS does 45 soles						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understand Jobsheets 1-8						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSESSMENT					
Conformity of answers	: 100%					
The assessment weight is 30% o	f 100% of the assessment for this course					
<b>IMPLEMENTATION SCHED</b>	ULE					
9th week	4 X 50 "					
<b>OTHERS REQUIRED:</b>						
REFERENCES						
	1. Ian Sommerville, Software Engineering, 6th edition, Addison-Wesley Pub Co., 2000.					
2. William R. King , 2015, P	2. William R. King , 2015, Planning for Information Systems, Routledge.					
3. Harlan D. Mills, Richard (	C. Linger, Alan R. Hevner, Principles of Information Systems Analysis and Design, Academic Press, 1990.					
4. Sprague, RH and McNurli	n, BC, Information Systems Management in Practice, 5th edition, Prentice-Hall, 2002.					
5. Ward, J et al., Strategic Planning for Information Systems Practice, 2nd edition, Wiley, 1996						





JUNIK NEGERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT					
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE Software engineering						
CODE	RTI212005WEIGHT (credits) / hour2/4SEMESTER2					
SUPPORTING	Eka Larasati Amalia, S.ST., MT.					
LECTURER						
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS did 35 questions						
SUB COURSE LEARNING A	CHIEVEMENTS					
Understanding Jobsheets 1-16						
DESCRIPTION						
Answer questions correctly						
WORKING METHOD						
Working within 4 X 50 "						
OUTER FORMAT						
Student answer						
INDICATORS, CRITERIA A	ND WEIGHT ASSESSMENT					
Conformity of answers	: 100%					
The assessment weight is 30% o	f 100% of the assessment for this course					
<b>IMPLEMENTATION SCHEE</b>	ULE					
17th week	4 X 50 "					
<b>OTHERS REQUIRED:</b>						
REFERENCES						
	1. Ian Sommerville, Software Engineering, 6th edition, Addison-Wesley Pub Co., 2000.					
2. William R. King , 2015, P	anning for Information Systems, Routledge.					
3. Harlan D. Mills, Richard (	C. Linger, Alan R. Hevner, Principles of Information Systems Analysis and Design, Academic Press, 1990.					
4. Sprague, RH and McNurli	n, BC, Information Systems Management in Practice, 5th edition, Prentice-Hall, 2002.					
5. Ward, J et al., Strategic Planning for Information Systems Practice, 2nd edition, Wiley, 1996						





## **Decision Support System**

Week	Sub-CP-MK	Subject	Assessment form Weight	
1	<ul> <li>Students can explain the role and influence of decision making in everyday life.</li> <li>Students can explain the forming elements of decision making</li> <li>And explain the use and Management Information System.</li> <li>Students can explain the advantages of using managerial decision making and management information systems</li> <li>Students can explain the functions, processes that occur and the types of decisions and decision-making phases</li> <li>Students understand and are able to</li> </ul>	<ul> <li>Managerial Decision Making and Management Information Systems</li> <li>Framework for decision support</li> <li>Definition of Decision Support System</li> <li>GDSS</li> <li>EIS, ES, AI</li> <li>The difference between MIS and DSS</li> <li>Decision-making</li> <li>The decision-making phase (Intelligence, design, choice, implementation</li> <li>Structured Decisions</li> <li>Semi-structured decisions</li> <li>Unstructured Decisions</li> <li>Multicriteria Decision Making</li> </ul>	<ul> <li>Group discussion regarding the differences in EIS, ES and AI and examples of their application</li> <li>Quiz 1 (1 question)</li> <li>Task 1: solve decision-</li> </ul>	Task 1: 2% Task 2: 2% Task 3: 2% Task 4: 2% Group discussion : 2% Quiz 1: 15% UTS: 15%
	apply the Weighted Sum Product, Weighted Product, and SAW methods	<ul> <li>method Weighted Product</li> <li>SAW</li> </ul>	<ul> <li>making cases using the WP, WSM, and SAW methods</li> <li>Quiz 1 (1 question)</li> </ul>	
3-4	<ul> <li>Students know the stages of ranking with the AHP method</li> <li>Students are able to find the eigenvector values in the matrix between AHP criteria</li> <li>Students are able to find the eigenvector values in the matrix between alternatives on each criterion of the AHP method</li> <li>Students are able to find the final weight to be sorted as AHP output</li> </ul>	Multicriteria Decision Making method Analytic Hierarchy Process	<ul> <li>Task 2: solving cases of decision making using the AHP method</li> <li>Quiz 1 (1 question)</li> <li>UTS (1 question)</li> </ul>	
5		Quiz 1		





6	<ul> <li>Students know the stages of ranking using the Elimination Et Choix Traduisant la Realité (ELECTRE) method</li> <li>Students can distinguish <i>concordance</i> and <i>discordance</i> on ELECTRE</li> <li>Students are able to find the final weight to be sorted as ELECTRE output</li> </ul>	<i>Multicriteria Decision Making</i> method ELECTRE	<ul> <li>Task 3: solve a decision- making case using the Electre method</li> <li>Quiz 2 (1 question)</li> </ul>		
7	<ul> <li>Students know the stages of ranking using the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method</li> <li>Students can distinguish positive ideal solutions and negative ideal solutions in TOPSIS</li> <li>Students are able to find the final weight to be sorted as TOPSIS output</li> </ul>	Multicriteria Decision Making TOPSIS method	<ul> <li>Task 4: solving cases of decision making using the Topsis method</li> <li>Quiz 2 (1 question)</li> </ul>		
8		UTS			
9	<ul> <li>Students understand the definition and use of the Multi-Objective Optimization Method on The Basic of Ratio Analysis (MOORA)</li> <li>Students are able to understand making decision matrices according to MOORA rules</li> <li>Students know the stages of ranking using the Multi-Objective Optimization Method on The Basic of Ratio Analysis (MOORA)</li> <li>Students are able to determine the criteria that are ordered as the MOORA ranking</li> <li>Students are able to find the final weight to be sorted as MOORA output</li> </ul>	Multicriteria Decision Making method Moora(1)	<ul> <li>Task 5: solve a decision- making case using the Moora method</li> <li>UTS (1 question)</li> </ul>	Task 5: 2% Task 6: 2% Task 7: 2% Task 8: 2% Discussion : 6% Quiz 2: 15% UAS: 20%	





10	<ul> <li>Students know the meaning of GDSS</li> <li>Students can simulate GDSS either directly or using a prototype</li> <li>Students get to know the ranking between groups of decision makers</li> </ul>	<i>Group Decision Support System</i> and various BORDA/HARE rankings	<ul> <li>Task 6: solving cases of decision making using the Borda method</li> <li>UTS (1 question)</li> </ul>	
11	<ul> <li>Students know various combinations of DSS methods</li> <li>Students look for journals related to SPK research</li> </ul>	Combination of Methods	Group discussions related to journal/proceeding analysis related to decision making using a combination method	
12	Quiz 2	•		
13	<ul> <li>Students can know the meaning and purpose of fuzzy in SPK</li> <li>Students know the types of fuzzy including the Fuzzy Inference System</li> <li>Students know and are able to make membership matrices in fuzzy</li> </ul>	Introduction to Fuzzy	Group discussions related to journal/proceeding analysis related to decision making using the Fuzzy method	
14	<ul> <li>Students understand and know Sugeno's FIS stages</li> <li>Students know and are able to apply fuzzification to the Sugeno method</li> <li>Students are able to apply Sugeno's FIS calculation solutions in implementing SPK</li> </ul>	Fuzzy Inference System (Sugeno)	Task 7: solving cases of decision making using the FIS Sugeno method	
15	<ul> <li>Students understand and know Tsukamoto's FIS stages</li> <li>Students know and are able to apply fuzzification to the Tsukamoto method</li> <li>Students are able to apply Tsukamoto's FIS calculation solutions in implementing SPK</li> </ul>	Fuzzy Inference System (Tsukamoto)	Task 8: solving cases of decision making using Tsukamoto's FIS method	





16	• Students are able to make a project from one of the methods that have been taught in the SPK course	Final project presentation	• Major Assignment: create a decision support system project using one of the methods taught in the DSS course	
17		UAS	<u>.</u>	
	100%			





LILLIN NEGERGA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
		ASS	ESSMENT METHOD			
SUBJECT	Decision Support S	ystem				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6	
SUPPORTING						
LECTURER ASSESSMENT FORMS						
ASSESSMENT FORMS						
QUIZ I						
ASSESSMENT IIILE						
SUB COURSE LEARNING A	CHIFVEMENTS					
Students can understand the con	cent of decision supp	ort systems				
Students understand and are able	to apply the Weight	ed Sum Product, Weighted Pro	oduct, and SAW methods			
Students understand and are able	to apply the AHP m	ethod				
DESCRIPTION						
5. Answer Quiz questions	related to the WSM,	WP, SAW, and AHP methods	5			
WORKING METHOD						
• The questions are done	through e-learning lr	ns.polinema.ac.id				
• Quiz done in 60 minute	S					
OUTER FORMAT						
• Job Object: Quiz						
Outcome Form: student Quiz answers						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	255MEN I				
Conformity of answers	: 100%	)				
Quiz 1 assessment weight is 15%	% of 100% assessmen	t of this course				





## **IMPLEMENTATION SCHEDULE**

4th week

60 minutes

## **OTHERS REQUIRED:**

#### REFERENCES

- Shimizu, Tamio, and friends, 2006, Strategic Alignment Process and Decision Support Systems: Theory and Case Studies, by Idea Group Inc.
   Goul, Michael, and Karen Corral, 2005, Enterprise model management and next generation decision support, Elsevier BV All rights reserved.







#### MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

## ASSESSMENT METHOD

SUBJECT	Decision Support S	ystem				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Topsis and electre material quiz						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can understand and app	bly the electre method	l				
Students can understand and app	bly the topsis method					
DESCRIPTION						
Answering Quiz questions relate	ed to decision making	using the electre and topsis m	ethods			
WORKING METHOD						
• The questions are done	through e-learning lr	ns.polinema.ac.id				
• Quiz done in 60 minute	s					
OUTER FORMAT						
G. Job Object: Quiz						
H. Outcome Form: studen	t Quiz answers					
<b>INDICATORS, CRITERIA A</b>	ND WEIGHT ASSE	CSSMENT				
Conformity of answers	: 100%	1				
-						
Quiz 2 assessment weight is 15%	% of 100% assessmen	t of this course				
<b>IMPLEMENTATION SCHEI</b>	DULE					
12th week			60 minutes			
<b>OTHERS REQUIRED:</b>						





#### REFERENCES

- 3. Shimizu, Tamio, and friends, 2006, Strategic Alignment Process and Decision Support Systems: Theory and Case Studies, by Idea Group Inc.
- 4. Goul, Michael, and Karen Corral, 2005, Enterprise model management and next generation decision support, Elsevier BV All rights reserved.





COLUMN NEGERI dert	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
		ASS	ESSMENT METHOD		
SUBJECT	Decision Support S	ystem			
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6
SUPPORTING					
LECTURER					
ASSESSMENT FORMS					
Midterm exam					
ASSESSMENT TITLE					
UTS material 1-7					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students can understand the con	cept of decision supp	ort systems			
Students understand and are able to apply the Weighted Sum Product, Weighted Product, and SAW methods					
Students understand and are able to apply the AHP method Students can understand and apply the electre method					
Students can understand and apply the electre method					
DESCRIPTION					
Answer UTS questions related to the AHP_MOORA_BORDA methods					
WORKING METHOD					
The questions are done through a learning line notificante as id					
<ul> <li>The questions are done unough e-rearning mis.pointema.ac.id</li> <li>UTS is done in 60 minutes</li> </ul>					
OUTER FORMAT					
Work Object: UTS					
• Outcome Form: UTS student answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
The UTS assessment weight is 15% of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					





# 8th week OTHERS REQUIRED:

60 minutes

#### REFERENCES

- 1. Shimizu, Tamio, and friends, 2006, Strategic Alignment Process and Decision Support Systems: Theory and Case Studies, by Idea Group Inc.
- 2. Goul, Michael, and Karen Corral, 2005, Enterprise model management and next generation decision support, Elsevier BV All rights reserved.



#### MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

#### ASSESSMENT METHOD

SUBJECT	Decision Support System					
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	6	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Final exams						
ASSESSMENT TITLE						
UAS material 1-17						
SUB COURSE LEARNING ACHIEVEMENTS						





Students can understand the concept of decision support systems					
Students understand and are able to apply the Weighted Sum Product, Weighted Product, and SAW methods					
Students understand and are able to apply the AHP method					
Students can understand and apply the electre method					
Students can understand and apply the topsis method					
Students can understand and are able to apply the topsis include Students understand and are able to apply the MOOR A method					
Students understand and and able to apply the MOORA include					
Students can understand and apply the BOKDA method					
Students can understand and apply the combination method					
Students understand and are able to apply the FUZZY method					
Students can understand and apply Sugeno's FIS method					
Students can understand and apply Tsukamoto's FIS method					
DESCRIPTION					
Presenting a decision-making system project using one of the methods taught in DSS courses					
WORKING METHOD					
The questions are done through e-learning lms.polinema.ac.id					
• UAS is presented within 15 minutes					
OUTER FORMAT					
Work Object: UAS					
• Presentation by student groups					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
The UAS assessment weight is 20% of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
17th week 15 minutes					
OTHERS REQUIRED:					
REFERENCES					
1 Shimizu Tamio and friends 2006 Strategic Alignment Process and Decision Support Systems: Theory and Case Studies by Idea Group Inc					
2 Goul Michael and Karen Corral 2005 Enterprise model management and next generation decision support Elsevier RV All rights reserved					





## Advanced Web Programming

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students are able to understand the concept of Web Framework (C2)</li> <li>Students are able to install Web Framework (C1)</li> <li>Students are able to understand the structure of the Web Framework (C2)</li> <li>Students understand the concept of</li> </ul>	<ul> <li>Web Frameworks:</li> <li>Introduction to Web Frameworks</li> <li>Installing Web Frameworks</li> <li>Web Framework Structure</li> </ul>		Task 1: 5% Task 2: 5% Task 3: 5% Task 4: 5% Task 5: 5% Task 6: 5%
	<ul> <li>routing Web Framework (C2)</li> <li>Students apply routing on the Web Framework (C3)</li> <li>Students understand the controller concept (C2)</li> <li>Students are able to implement controllers on the Web Framework (C3)</li> </ul>	<ul> <li>Understanding of routing</li> <li>Routing implementation</li> <li>Understanding of controllers</li> </ul>		Task 7: 5% Quiz 1: 10% UTS: 10%
3	<ul> <li>Students understand the concept of view in the Web Framework (C2)</li> <li>Students are able to apply the template engine to the Web Framework (C3) view</li> <li>Students are able <i>to</i> do layouts in the Web Framework (C3) view</li> </ul>	View - Introduction to views - engine templates - Layouts		
4	<ul> <li>Students are able to understand the concept of models in the Web Framework (C2)</li> <li>Students are able to make a connection to the database (C3)</li> <li>Students are able to make schema migrations (C3)</li> <li>Students are able to make seeders (C3)</li> </ul>	Model: - Introduction to models - Introduction to migration - Introduction to seeding		
5		Quiz 1		1
6	- Students <b>understand</b> the concept of authentication with Web Framework (C2)	Authentication:-Authentication-Registration Form		





7	<ul> <li>Students are able to make a registration form (C6)</li> <li>Students are able to create a login form (C6)</li> <li>Students understand the concept of ORM (C2)</li> <li>Students are able to perform CRUD operations with ORM (C6)</li> </ul>	<ul> <li>Login Form</li> <li>ORMs:</li> <li>Introduction to ORMs</li> <li>CRUD with ORMs</li> </ul>	
8		UTS	
9	<ul> <li>Students are able to understand the concept of ORM with databases that have relations (C6)</li> <li>Students are able to perform CRUD operations with relations in ORM (C6)</li> </ul>	CRUD related: - ORM relation concept - ORM relational CRUD	Task 8: 5% Duty 9: 5% Task 10: 20% Quiz 2: 10%
10	<ul> <li>Students are able to upload files with the Web Framework (C3)</li> <li>Students are able to build reporting features (C3)</li> </ul>	Upload and Reporting: - Upload files - Reporting	UAS: 15%
11	<ul> <li>Students understand the concept of RESTful (C2)</li> <li>Students are able to build token authentication on RESTful API (C3)</li> <li>Students are able to build CRUD with RESTful API (C3)</li> </ul>	<ul> <li>RESTful APIs:</li> <li>Introduction to RESTful APIs</li> <li>Authenticate with a RESTful API token</li> <li>Build a CRUD RESTful API</li> </ul>	
12		Quiz 2	
13 - 16	Students <b>build</b> projects based on selected case studies (C6)	Project	
17		UAS	
	•	TOTAL WEIGHT	100%





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NEGES	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOCY DEPADTMENT						
ster and the	INFORMATION I	ECHNOLOGY DEPARIM	IEN I CDJEEDDIG				
ASSESSMENT METHOD							
ASSESSMENT METHOD							
SUBJE	Advanced Web Progr	ramming	2 1: / (1	GEMEGTED	2		
CODE	R11194006	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	3		
SUPPORTING	1. Ade Ismail S. Kon	n., M. 11					
LECTURER	2. Dian Hanifudin Su	ibhi, S. Kom., M. Kom.					
	3. Habible Ed Dien, S	S. Kom., MI					
	4. Kadek Suarjuna Ba	atubulan, S. Kom, M.I					
	5. Million Ni'ma Sho	umi, S.Kom., M.Kom					
	6. Moch. Zawaruddir	Abdullah, S.ST., M.Kom					
	7. Putra Prima Arnan	di, S1, M. Kom.					
ASSESSMENT FORMS							
Mid Semester Examination (UT	S)						
ASSESSMENT TITLE							
The ORM implementation for a	simple case study						
SUB COURSE LEARNING ACHIEVEMENTS							
- Students understand the concept of authentication with Web Framework (C2)							
- Students are able to make a registration form (C6)							
- Students are able to create a login form (C6)							
- Students understand the concept of ORM (C2)							
- Students are able to perform CRUD operations with ORM (C6)							
- Students are able to create case studies (C6)							
DESCRIPTION							
• From the company profile and web admin case studies that have been done at previous meetings, develop website pages with additional or improved functions for authentication,							
CRUD features with ORM and other features/menus that will add to the usefulness of the application built web-based. The complexity of features/functions affects the assessment.							
Implement authentication and CRUD features with ORM in a simple case study.							
WORKING METHOD							
1. Project name UTS_NIM1_1	NIM2, example: UTS_1	193171XXXX					
2. The project is done in groups, where one group consists of 2 students							
3. The uploaded project is 1 document file (UTS NIM) containing the account link and the project repository on Github							
OUTER FORMAT							
A. Work Object: Website page in accordance with the selected case study							
B. Output Form: report containing program code and screenshots of web pages in PDF format on A4 paper size. The student's name, NIM, and class are written at the top left. Systematize							
the file name is UTS NIM1 NIM2							





INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Report format structure	: 10%				
Implementation suitability	: 50%				
Case study accuracy	: 40%				
The UTS assessment weight is 10%	of 100% of the assessment	for this course			
IMPLEMENTATION SCHEDUI	IMPLEMENTATION SCHEDULE				
8th week			1 week		
OTHERS REQUIRED:					
REFERENCES					
1. Muhammad Azamuddin, Hafid Mukhlasin, 2019. Laravel the PHP framework for web artisans, Kungfu Koding.					

INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING         SUBJE         Algorithms and Data Structures         CODE       RTI192009       WEIGHT (credits) / hour       2 credits / 3 hours       SEMESTER       2         SUPPORTING LECTURER       Imam Fahrur Rozi, ST., MT.						
STUDY PROGRAM : D4 INFORMATICS ENGINEERING         ASSESSMENT METHOD         SUBJE         Algorithms and Data Structures         CODE       RTI192009       WEIGHT (credits) / hour       2 credits / 3 hours       SEMESTER       2         SUPPORTING       Imam Fahrur Rozi, ST., MT.         LECTURER       2						
ASSESSMENT METHOD         SUBJE       Algorithms and Data Structures         CODE       RTI192009       WEIGHT (credits) / hour       2 credits / 3 hours       SEMESTER       2         SUPPORTING LECTURER       Imam Fahrur Rozi, ST., MT.						
SUBJE       Algorithms and Data Structures         CODE       RTI192009       WEIGHT (credits) / hour       2 credits / 3 hours       SEMESTER       2         SUPPORTING LECTURER       Imam Fahrur Rozi, ST., MT.						
CODE       RTI192009       WEIGHT (credits) / hour       2 credits / 3 hours       SEMESTER       2         SUPPORTING LECTURER       Imam Fahrur Rozi, ST., MT.       Imam Fahrur Rozi, ST., MT.						
SUPPORTING     Imam Fahrur Rozi, ST., MT.       LECTURER     Imam Fahrur Rozi, ST., MT.						
LECTURER						
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz material 1-3						
SUB COURSE LEARNING ACHIEVEMENTS						
Students understand the basic concepts of programming						
Students understand the definition of class, object, and the stages of making an array of objects						
Students understand the use of Brute Force and Divide-Conquer algorithms						
DESCRIPTION						
Answer Quiz questions related to basic programming concepts, class, object, array of objects, Brute Force, and Divide-Conquer						
WORKING METHOD						
1. The questions are done through e-learning lms.polinema.ac.id						
2. Quiz done in 35 minutes						
OUTER FORMAT						
A. Job Object: Quiz						
B. Outcome Form: student Quiz answers						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers : 100%						
Quiz 1 assessment weight is 10% of 100% assessment of this course						
IMPLEMENTATION SCHEDULE						
4in week     35 minutes						
VIIILAS ALQUIALD:						
DEEEDENCES						
NEFENCINCES 1. Conduish MT. Tomogois, D., & Coldwagger, MIL2014. Data Structures & Algorithms in Low (4), Edition, Wiley Clabel Education						
2. Damadhani C. 2015. Dasia Algorithm and Data Structure with Java Language. Vogyakarta: Andi Dublicher						
2. Ramacham, C. 2013. Dasic Algorithms and Data Structures in Java Language. Togyakarta: And Tublisher						
4 Harivanto B 2007 Data Structure Bandung: Informatics						
5. Buana, IS, Nata, GN M, & Arnawa, IK 2018, Data Structure, Yogyakarta: Andi Publisher						
6 Kadir A Theory and Application of Data Structures Using Java 2015 Yogyakarta: Andi Publisher						

#### Job Preparation English

Week	Sub-CP-MK	Subject	Assessment form	Weight
1-2	Read and understand job advertisements and choose the right type of job according to your strengths and weaknesses.	<ul> <li>Reading Job Advertisements         <ul> <li>Assessing Yourself</li> <li>Parts of Job</li> <li>Advertisement</li> <li>Questions to Ask</li> <li>Yourself after Reading</li> <li>Job Ads</li> <li>Terms and</li> <li>Abbreviations Usually</li> <li>Found in Job</li> <li>Advertisements</li> </ul> </li> </ul>	<ul> <li>Task 1: Make a Mind Map and Search for suitable job vacancies</li> <li>Quiz 1 (5 questions)</li> <li>UTS (6 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 2.5% Task 2: 2.5% Task 3: 2.5% Task 4: 2.5% Task 5: 2.5% Task 6: 2.5% Quiz 1: 10% UTS: 25%
3-4	• Write a job application letter	<ul> <li>Writing a Job Application Letter</li> <li>Things to Consider Before Writing A Job Application Letter</li> <li>Online Application Letters</li> <li>Job Application Letter Template</li> <li>Sample of Job Application Letter</li> </ul>	<ul> <li>Task 2: Write an Application Letter and Resume</li> <li>Quiz 1 (8 questions)</li> <li>UTS (7 questions)</li> <li>UAS (3 questions)</li> </ul>	
5-6	• Write a CV	<ul> <li>Writing a Curriculum Vitae</li> <li>Things to Consider Before Writing a Curriculum Vitae</li> <li>Information a CV Should Include</li> <li>Curriculum Vitae Template</li> <li>Sample of CV</li> </ul>	<ul> <li>Task 3: Write a CV for professional personal data</li> <li>Quiz 1 (7 questions)</li> <li>UTS (7 questions)</li> <li>UAS (3 questions)</li> </ul>	
7-8	Practicing Job Interviews	<ul> <li>Conducting a Job Interview</li> <li>Kinds of Job Interviews</li> <li>Things to Prepare before Having a Job Interview</li> <li>Things Supposed to Do on a D Day (of the Job Interview)</li> <li>Common Questions Asked by the Interviewer</li> </ul>	<ul> <li>Task 4: Practice an online job interview</li> <li>UTS (8 questions)</li> <li>UAS (4 questions)</li> </ul>	
9		UTS		1
10-11	<ul> <li>Practice effective presentations</li> <li>Understand the tips and do the TOEIC ® or PECT</li> </ul>	<ul> <li>Delivering an Effective Presentation         <ul> <li>Factors Make People Irritated during Presentation</li> <li>Things to Consider before Presentation</li> <li>Things to Consider in Making Power Point Slides</li> <li>Things to Do during Presentations</li> </ul> </li> <li>Preparing for TOEIC ® or PECT (Polytechnic English Competency Test)         <ul> <li>Strategies and Practice of Speaking Tests of TOEIC ® or PECT</li> <li>Strategies and Practice of Written Tests of TOEIC ® or</li> </ul> </li> </ul>	<ul> <li>Task 7: Create and carry out professional presentations for the world of work.</li> <li>Quiz 2 (5 questions)</li> <li>UAS (3 questions)</li> <li>Task 8: TOEIC Reading &amp; Listening Practice and Try- Out</li> <li>Quiz 2 (5 questions)</li> <li>UAS (4 questions)</li> </ul>	Task 7: 2.5% Task 8: 2.5% Task 9: 2.5% Task 10: 2.5% Assignment 11: 2.5% Task 12: 2.5% Quiz 2: 10% UAS: 25%
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17		PECT UAS		
	TOTAL	WEIGHT		100%

$\land$	MALANG STATE	E POLYTECHNIC			
WANK NEGERIA	<b>INFORMATION</b>	TECHNOLOGY DEPARTM	IENT		
and the second s	STUDY PROGRA	M: D3 INFORMATICS MA	ANAGEMENT		
	ASSESSMENT METHOD				
SUBJE	Job Preparation Eng	glish			
CODE	RTI196001	WEIGHT (credits) / hour	2 credits / 3 hours	SEMESTER	8
SUPPORTING LECTURER	Faiz Ushbah Mubar	rok, S.Pd, M.Pd.			
ASSESSMENT FORMS					
Ouiz 1					
ASSESSMENT TITLE					
Ouiz material 1-4					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students understand how to read	d job vacancies				
Students are able to write an Ap	plication Letter				
Students are able to write resum	ies				
Students are able to write Curri	culum Vitae				
Students are able to conduct int	erviews				
DESCRIPTION					
Carry out a simulation of apply	ing for a job related to	the material Unit 1-4 Applica	tion Letter, Resume , Curr	riculum Vitae, and Job inte	erview
WORKING METHOD					
1. Answer the questions given	in the video conferen	ice			
2. Students answer questions v	within 15 minutes				
OUTER FORMAT					
A. Job Object: Quiz					
B. Outcome Form: student inte	erview answers				
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT			
Conformity of answers	: 100%	)			
Quiz 1 assessment weight is 10% of 100% assessment of this course					
IMPLEMENTATION SCHEDULE					
9th week 35 minutes					
<b>OTHERS REQUIRED:</b>	OTHERS REQUIRED:				
REFERENCES					
1. Asri, Atiqah Nurul, et.	al. 2018. English for .	Iob Preparation : Fourth Edition	on. Polynema Press		
2. Downes, Colm. 2012.	Cambridge English fo	or Job Hunting. Cambridge: Ca	mbridge University Press.		
3. Grussendorf, Marion. 2011. Oxford English for Presentations. Oxford: Oxford University Press.					

- 4. Moss, James, Lee, Clayton, and Atkinson, Peter. 2007. Presenting for Success. Business English Pod.
- 5. Pledger, Path. 2015. Oxford English for Human Resources. Oxford: Oxford University Press.
- 6. Trew, Grant. 2008. Tactics for TOEIC ® Listening and Reading Strategies. Oxford: Oxford University Press.
- 7. Skills Academy. 2020. Job Interview Tips.

INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D3 INFORMATICS MANAGEMENT						
STUDY PROGRAM : D3 INFORMATICS MANAGEMENT						
STUDY PROGRAM : D3 INFORMATICS MANAGEMENT						
ASSESSMENT METHOD						
SUBJE     Job Preparation English						
CODERTI196001WEIGHT (credits) / hour2 credits / 3 hoursSEMESTER8						
SUPPORTING Faiz Ushbah Mubarok, S.Pd, M.Pd.						
LECTURER						
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz material 11-16						
SUB COURSE LEARNING ACHIEVEMENTS						
Students are able to answer the TOEIC Reading & Listening Try-Out test						
DESCRIPTION						
Answer Quiz questions related to Unit 11-16 TOEIC Reading & Listening material.						
WORKING METHOD						
1. The questions are done through e-learning lms.polinema.ac.id						
2. Quiz done in 60 minutes						
OUTER FORMAT						
A. Job Object: Quiz						
B. Outcome Form: student Quiz answers						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers : 100%						
Quiz 1 assessment weight is 10% of 100% assessment of this course						
IMPLEMENTATION SCHEDULE						
16th week 60 minutes						
OTHERS REQUIRED:						
DEFEDENCES						
KEFEKENCES						
<ol> <li>Asri, Atiqan Nurul, et.al. 2018. English for Job Preparation : Fourth Edition. Polynema Press</li> <li>Deumes, Colm. 2012. Combridge English for Job Hunting. Combridge: Combridge University Press</li> </ol>						
<ol> <li>Downes, Colm. 2012. Cambridge English for Job Hunting. Cambridge: Cambridge University Press.</li> <li>Crussendorf Mexicon 2011. Oxford English for Descentations. Oxford University Press.</li> </ol>						
4 Moss James Lee Clayton and Atkinson Peter 2007 Presenting for Success Business English Pod						
5. Pledger, Path. 2015. Oxford English for Human Resources. Oxford: Oxford University Press						

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Trew, Grant. 2008. Tactics for TOEIC 
 Listening and Reading Strategies. Oxford: Oxford University Press.

 Skills Academy. 2020. Job Interview Tips.

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#### ASSESSMENT AND EVALUATION PLAN

## Big Data

Week	Sub-CP-MK	Subject	Assessment form	Weight
1-3	Students are able to explain the concept of Big Data.	<ul> <li>Definition of Big Data</li> <li>Background Emergence of Big Data technology</li> <li>Benefits of Big Data Technology</li> <li>Definition of Hadoop</li> <li>History of the Emergence of Hadoop</li> <li>Hadoop Ecosystem</li> <li>Storage on Hadoop</li> <li>Parallel Processing on Hadoop</li> </ul>	• Exercise 1	Exercise 1: 3% Quiz 1: 9% Exercise 2: 12% UTS: 9%
4		Quiz 1		7
5-7	Students are able to explain concepts, and work with HDFS.	<ul> <li>Definition and How HDFS Works</li> <li>Name nodes &amp; Data Nodes</li> <li>Works with HDFS</li> <li>Create applications that interact with HDFS</li> </ul>	• Exercise 2	
8		UTS		
9-11	Students are able to explain concepts, and work with the MapReduce framework.	<ul> <li>Understanding MapReduce</li> <li>Mappers &amp; Reducers</li> <li>The MapReduce daemon</li> <li>Definition of MapReduce Job</li> <li>Create MapReduce Jobs</li> <li>Another Example of MapReduce Job Implementation</li> </ul>	• Exercise 3	Exercise 3: 12% Quiz 2: 6% Exercise 4: 3% Exercise 5: 3% UAS: 12%
12		Quiz 2		
13	Students are able to explain an overview of research and development with Big Data.	<ul> <li>Research</li> <li>Development</li> <li>Current developments in Big Data Technology</li> <li>Some examples of the latest technologies in the Hadoop ecosystem</li> </ul>	• Exercise 4	

		<ul> <li>Examples of using big data in scientific research.</li> <li>Examples of popular big data products.</li> </ul>		
14-16	Students mention and explain examples of using Big Data in the field of modern research.	<ul> <li>Scientific Publication Concept</li> <li>Searching for Scientific Publication Articles</li> <li>Big Data research in the field of handling Covid-19</li> <li>Big Data Research in Education.</li> <li>Big Data research in the industrial/retail sector.</li> </ul>	• Exercise 5	
17				
	•	TOTAL WEIGHT		100%

	MALANG STATE PC	DLYTECHNIC			
	<b>INFORMATION TEC</b>	CHNOLOGY DEPARTMENT			
Current Arcoen, 19	STUDY PROGRAM:	D4 INFORMATICS ENGINEERING			
		ASSESSMENT METHOD	)		
SUBJECT	Big Data				
CODE	RTI196003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3
SUPPORTING LECTURER	1. Yoppy Yunhas	snawa, S.ST., M.Sc.			
	2. Dian Hanifudi	n Subhi, S. Kom., M. Kom.			
	3. Vipkas Al Hac	lid Firdaus, ST., MT			
	4. Habibie Ed Di	en. S. Kom., MT			
	5 M Hasvim Ra	tsaniani S Kom M Kom			
	6 M Shulhan K	hairy S Kom M Kom			
	7 Noprignto S k	Com M Fng			
ASSESSMENT FORMS		com, m. Eng.			
Review papers					
ASSESSMENT TITLE					
Quiz 1					
SUB COURSE LEARNING ACHIEV	/EMENTS				
Students are able to explain the concept	of Big Data.				
DESCRIPTION					
Conduct literature reviews and write rev	iew papers				
WORKING METHOD					
1. Find 5 (10) papers that have similar to	opics, regarding the use of	big data. Example: "big data stock mark	tet", "big data disaster", "big data par	ndemic", "big data culinary"	
2. Create a review paper. An example of	f a review paper, usually a	review paper has the keyword "an overv	view"		
OUTER FORMAT					
Work Object: Quiz I					
Outer Form: review paper	ACUT ASSESSMENT				
Number of papers reviewed: 25%	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
Quality of review paper made: 75%					
The score for Quiz 1 is 9% of 100% for	The score for Ouiz 1 is 9% of 100% for this course				
IMPLEMENTATION SCHEDULE					
4th week			1 week		
OTHERS REQUIRED:			·		

## REFERENCES

1.Nataraj

- aj Dasgupta. 2018. "Practical Big Data Analytics". Buyya, Rajkumar. Calheiros, Rodrigo N. Dastjerdi, Amir Vahid. 2016."Big Data Principles and Paradigms". Morgan Kaufmann., J. Lescovec, A. Rajaraman, and J. Ullman, "Mining of Massive Datasets". 2.
- 3.
- 4. Udemy The Ultimate Hands-On Hadoop: Tame your Big Data!

LUNIK NEGERIAN DE	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SUBJECT	Big Data				
CODE	RTI196003 WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	<ol> <li>Yoppy Yunhasnawa, S.ST., M.Sc.</li> <li>Dian Hanifudin Subhi, S. Kom., M. Kom.</li> <li>Vipkas Al Hadid Firdaus, ST., MT</li> <li>Habibie Ed Dien, S. Kom., MT</li> <li>M. Hasyim Ratsanjani S. Kom., M. Kom.</li> <li>M. Shulhan Khairy, S. Kom., M. Kom.</li> </ol>				
A SCECCMENT FORMS	7. Noprianto S. Kom., M. Eng.				
ASSESSMENT FORMS					
ASSESSMENT TITLE					
Ouiz 2					
SUB COURSE LEARNING ACHIEV	TEMENTS				
Students are able to explain concepts, ar	nd work with the MapReduce framework.				
DESCRIPTION					
Perform bigdata analytics and visualizat	ion using bigquery				
WORKING METHOD					
Perform bigdata analytics on a database	then create a visualization using bigquery				
OUTER FORMAT					
Work Object: Quiz 2					
Outer Form: Report					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conclusion from big data analytics performed: 50%					
Generated visualization: 50%					
INPLEMENTATION SCHEDULE					
12th week					
OTHERS REOURED:		1 WCCK			
REFERENCES					

- Nataraj Dasgupta. 2018. "Practical Big Data Analytics".
   Buyya, Rajkumar. Calheiros, Rodrigo N. Dastjerdi, Amir Vahid. 2016. "Big Data Principles and Paradigms".
   Morgan Kaufmann., J. Lescovec, A. Rajaraman, and J. Ullman, "Mining of Massive Datasets".
   Udemy The Ultimate Hands-On Hadoop: Tame your Big Data!

U U U U U U U U U U U U U U U U U U U	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SURIECT	ASSESSMENT METHOD				
CODE	RTI196003 WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	<ol> <li>Yoppy Yunhasnawa, S.ST., M.Sc.</li> <li>Dian Hanifudin Subhi, S. Kom., M. Kom.</li> <li>Vipkas Al Hadid Firdaus, ST., MT</li> <li>Habibie Ed Dien, S. Kom., MT</li> <li>M. Hasyim Ratsanjani S. Kom., M. Kom.</li> <li>M. Shulhan Khairy, S. Kom., M. Kom.</li> </ol>		SEMESTER	3	
	7. Noprianto S. Kom., M. Eng.				
ASSESSMENT FORMS					
ASSESSMENT IIILE					
SUB COUDSE LEADNING ACHIEV	TEMENTS				
SUB COURSE LEARNING ACHIEV	of Rig Data				
Students are able to explain the concept	nd work with HDFS				
DESCRIPTION					
Answer questions from meeting materia	11-7				
WORKING METHOD					
Problems are done through Google Forn	1				
OUTER FORMAT					
Work Object: Quiz 2					
Outcome: UTS student answers	Outcome: UTS student answers				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers: 10 0 %					
The UTS assessment weight is 6% of 10	0% of the assessment for this course				
IMPLEMENTATION SCHEDULE	IMPLEMENTATION SCHEDULE				
SIN WEEK		60 minut	es		
UTHERS REQUIRED:					
REFERENCES					

- Nataraj Dasgupta. 2018. "Practical Big Data Analytics".
   Buyya, Rajkumar. Calheiros, Rodrigo N. Dastjerdi, Amir Vahid. 2016. "Big Data Principles and Paradigms".
   Morgan Kaufmann., J. Lescovec, A. Rajaraman, and J. Ullman, "Mining of Massive Datasets".
   Udemy The Ultimate Hands-On Hadoop: Tame your Big Data!

	MALANG STATE POLY	TECHNIC		
A NEGR	INFORMATION TECHN	OLOGY DEPARTMENT		
Contraction of the second seco	STUDY PROGRAM: D4	INFORMATICS ENGINEERING		
	•	ASSESSMENT METHOD		
SUBJECT	Big Data			
CODE	RTI196003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 3
SUPPORTING LECTURER	1. Yoppy Yunhasnaw	va, S.ST., M.Sc.		
	2. Dian Hanifudin Su	bhi, S. Kom., M. Kom.		
	3. Vipkas Al Hadid F	irdaus, ST., MT		
	4. Habibie Ed Dien, S	S. Kom., MT		
	5. M. Hasvim Ratsan	iani S. Kom., M. Kom.		
	6 M Shulhan Khairy	v S Kom M Kom		
	7 Noprianto S Kom	M Eng		
ASSESSMENT FORMS	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,		
Big data portfolio				
ASSESSMENT TITLE				
UAS				
SUB COURSE LEARNING ACHIEV	EMENTS			
Students are able to explain the concept	of Big Data.			
Students are able to explain concepts, an	d work with HDFS.			
Students are able to explain concepts, an	d work with the MapReduce f	framework.		
Students are able to explain an overview	of research and development	with Big Data.		
Students mention and explain examples	of using Big Data in the field	of modern research		
DESCRIPTION	<u> </u>	( . 1: 1 ( : d) d) C 11	· 1	
Make a Big Data portfolio project in the	form, data sources, and free c	ase studies but with the following co	nsiderations:	41
• At a minimum it's a MapReduct	e Job with data that you create	yoursell, you run it on a Hadoop cit	ister, and you interpret/explain what	the results are like.
• It's even better II you can find y	our own case studies with our	ier vand data sources (for example: 1	rom Kaggle.com, or from other sour	tes) and can be processed, then you create
a MapKeuue Job. • Derfect score (A) if you don't just make ManDeduce Jobs but you can also combine it with other (technology) stacks such as web annications (DUD/Meda IC/Deast atc.) as mabile				
or desktop				
WORKING METHOD				
• Done individually (one student	makes 1 Big Data portfolio p	roject)		
• The Hadoop cluster used can be	e your own cluster, borrowed	from a friend, or one provided by the	supervisor (if any).	
• If you choose to use data from o	other sources and then the data	a is too large for your cluster, please	reduce the data to a minimum of 100	) rows or 1 MB
OUTER FORMAT				

### Work Object: UAS

Outer Shape:

- Compressed project source code file with ZIP format
- Video in MP4 format which contains the following points:
  - Explanation of what case study you created.
  - $\circ$  An explanation of where the data was obtained and what form the data is in.
  - An explanation of the important source code, at least an explanation in the map process and the reduce process.
  - Explanation of the execution results.
  - What is the output description like?
- The videos collected can be made as simple as possible, no need to edit, the important thing is that the explanations are clear and your face is visible when explaining. You can make the video with makeshift tools like recorded Zoom. It can also be done in another way that you think is easy.
- Video length cannot be longer than 10 minutes.
- All of these files are collected in your respective GitHub repository, which is equipped with a Readme file containing screenshots of the results and video URLs explaining your project.

1 week

• If you pass the collection limit, then you are considered not taking the UAS.

# INDICATORS, CRITERIA AND WEIGHT ASSESSMENT

Conformity of answers: 100%

The UTS assessment weight is 12% of 100% of the assessment for this course

**IMPLEMENTATION SCHEDULE** 

#### 17th week

**OTHERS REQUIRED:** 

### REFERENCES

1.Nataraj Dasgupta. 2018. "Practical Big Data Analytics".

- 2. Buyya, Rajkumar. Calheiros, Rodrigo N. Dastjerdi, Amir Vahid. 2016."Big Data Principles and Paradigms".
- 3. Morgan Kaufmann., J. Lescovec, A. Rajaraman, and J. Ullman, "Mining of Massive Datasets".

4. Udemy - The Ultimate Hands-On Hadoop: Tame your Big Data!

#### ASSESSMENT AND EVALUATION PLAN

### IoT (Internet of Things)

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students are able to explain the concept and architecture of IoT</li> <li>Students are able to explain standard IoT delivery protocols</li> <li>Students can understand the MQTT delivery protocol</li> <li>Students are able to explain various IoT cloud platforms</li> </ul>	<ul> <li>Types of Device Constraints (Microcontroller Units, sensors, actuators)</li> <li>Definition of Edge Computing</li> <li>Definition and examples of Cloud Computing</li> </ul>		Duty : 20% Quiz 2x: 20% UTS : 30% UAS : 30%
2	<ul> <li>Students are able to explain the basics of microcontrollers</li> <li>Students are able to understand about boards and pin definitions</li> <li>Students can understand MCU input and output</li> <li>Students are able to explain protocol interfacing</li> </ul>	<ul> <li>Board introduction and pin definition</li> <li>MCU Input-Output</li> <li>ADC-DAC (Analog to Digital Converter)</li> <li>Protocol Interfacing (UART, I2C, SPI)</li> <li>Voltage Divider</li> </ul>		
3	<ul> <li>Students are able to install &amp; configure supporting software &amp; hardware</li> <li>Students are able to use Arduino IDE, VS code platform io, and Fritzing</li> <li>Students can assemble an MCU with several sensors, actuators and LCDs</li> <li>Students are able to make simple MCU and Writing code</li> </ul>	<ul> <li>Fritzing Designer</li> <li>Arduino IDE</li> <li>Visual Studio 2017 Community</li> <li>Debugging with Serial Monitor</li> <li>Assembling on the project board: 5</li> <li>different LEDs, DHT11, LCD1602, LDR</li> <li>Added NodeMCU libraries</li> </ul>		
4	U	Quiz 1		
5	<ul> <li>Students are able to understand about ordinary LEDs and RGB LEDs</li> <li>Students are able to explain how digitalWrite works</li> <li>Students are able to implement Coding Running LEDs</li> <li>Students are able to develop LED simulations</li> </ul>	Implementation of Running LED Programs		

6			
6	• Students can <b>explain</b> how the	Implementation of the DHIII Temperature	
	DHT11 sensor works	& Humidity Sensor Program	
	• Students can <b>understand</b> how		
	analogRead works		
	• Students can <b>display</b> temperature		
	and humidity in degrees and farenheit on a		
	serial monitor in real time		
7	• Students can <b>explain</b> how the	• Implementation of Light Sensor	
,	LDR light sensor works	Program (LDR)	
	Students can calculate and	Ultrasonic Sensor Program	
	display the light intensity received by the	Implementation	
	I DR sensor analogously	Implementation	
	Students can display temperature		
	• Students can display temperature		
	and numberly values on a serial monitor		
	• Students can classify information		
	on the serial monitor: "Dark", "Dim",		
	"Bright"		
	• Students can <b>explain</b> the process		
	of calculating distances based on waves		
	sent and received		
	• Students can <b>display</b> the distance		
	between objects with ultrasonic objects on		
	the serial monitor screen in cm and inches		
8		UTS	
9	• Students can <b>explain</b> how LCD	LCD I2C 16x2	
	I2C 16x2 works		
	• Students can <b>understand</b> the		
	location of the I2C pin		
	• Students can <b>display</b> sensor		
	values on the 16x2 I2C LCD		
	Students are able to calibrate		
	LCD I2C		

10	• Students are able to <b>explain</b> the	Server Sockets	
	concept of TCP/IP	Client sockets	
	• Students are able to <b>explain</b> the		
	concept of the Socket TCP/IP protocol so		
	that the MCU can communicate with		
	other devices		
	• Students can <b>create</b> a socket		
	client program on the MCU side that is		
	tasked with sending sensor data to Socket		
	Server in real-time		
	• Students are able to explain how		
	socket servers work as "listening" for all		
	• Students are able to avalain the		
	• Students are able to explain the		
	communication		
	<ul> <li>Students can create a Socket</li> </ul>		
	Server program with GUI C#. Java.		
	Python, etc. to receive MCU sensor data.		
	then display it in real-time on the socket		
	server side		
11	• Students <b>understand</b> various IoT	IoT platform installation	
	cloud platforms		
	• Students are able to <b>install and</b>		
	configure the IoT platform.		
12		Quiz 2	
13	• Students are able <b>to configure</b>	IoT Dashboard System Management	
	user rules on the IoT Platform		
	• Students are able to <b>configure</b>		
	smart devices		
	• Students are able to implement		
	programs on the smart device side		
	referring to the IoT Server library used		
	• Students are able to		
	communicate between smart devices and		
	IoT Servers		
	• Students are able to <b>display</b>		
	sensor data to the IoT Dashboard System		
	as monitoring		

14-15	<ul> <li>Students are able to develop software on the smart device side.</li> <li>Students are able to install and configure message brokers.</li> <li>Students are able to process sensor data on local or cloud servers.</li> <li>Students can make a simple sensor data dashboard</li> </ul>	<ul> <li>Smart device configuration</li> <li>IoT Gateway concept</li> <li>Message brokers</li> </ul>	
15-16	Students are able to solve simple cases with IoT technology	Project	
17		UAS	
		TOTAL WEIGHT	100%

	MALANG STATE	<b>POLYTECHNIC</b>						
LENNIK NEGERI 49	<b>INFORMATION</b>	FECHNOLOGY DEPARTM	1ENT					
( of the second se	STUDY PROGRA	STUDY PROGRAM : D4 INFORMATICS ENGINEERING						
		ASS	ESSMENT METHOD					
SUBJEC	INTERNET OF T	HINGS						
CODE	RTI196005	WEIGHT (credits) / hour	3 credits/ 6 hours	SEMESTER	1			
SUPPORTING	Noprianto, S.Kom.,	M.Eng						
LECTURER								
ASSESSMENT FORMS								
Quiz 1								
ASSESSMENT TITLE								
Quiz 1 is accessed within the LM	ΔS							
SUB COURSE LEARNING A	CHIEVEMENTS							
Students are able to understand	material 1-3							
DESCRIPTION								
Stages of creating an IoT project	t for the final project							
WORKING METHOD								
LMS								
OUTER FORMAT								
Quiz Student Paper Draft 1								
INDICATORS, CRITERIA A	ND WEIGHT ASSI	ESSMENT						
Conformity of answers	: 100%	)						
The score for Quiz 1 is 10% of 1	00% for this course							
IMPLEMENTATION SCHEDULE								
4th week 150 minutes								
OTHERS REQUIRED:								
REFERENCES								
1. Arduino Programming	For Beginners, 2019	Jasakom						
2. Smart Attendance with	Smart Card and Fing	gerprint, 2021, Polinema Press						

INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD					
SUBJEC INTERNET OF THINGS					
CODE     RTI196005     WEIGHT (credits) / hour     3 credits/ 6 hours     SEMESTER     1					
SUPPORTING Noprianto, S.Kom., M.Eng					
LECTURER					
ASSESSMENT FORMS					
Quiz 2					
ASSESSMENT TITLE					
Quiz 2 is accessed within the LMS					
SUB COURSE LEARNING ACHIEVEMENTS					
Students are able to understand material 8-11					
DESCRIPTION					
Stages of creating an IoT project for the final project					
WORKING METHOD					
LMS					
OUTER FORMAT					
Draft Student Paper Quiz 2					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
The score for Quiz 2 is 10% of 100% for this course					
IMPLEMENTATION SCHEDULE					
12th week 150 minutes					
OTHERS REQUIRED:					
REFERENCES					
1. Arduino Programming For Beginners, 2019, Jasakom					
2. Smart Attendance with Smart Card and Fingerprint, 2021, Polinema Press					

	MALANG STATE	<b>POLYTECHNIC</b>				
SERVICE NEGERIAN	INFORMATION TECHNOLOGY DEPARTMENT					
Loci Loci Loci Loci Loci Loci Loci Loci	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING			
		ASS	ESSMENT METHOD			
SUBJEC	INTERNET OF T	HINGS				
CODE	RTI196005	WEIGHT (credits) / hour	3 credits/ 6 hours	SEMESTER	1	
SUPPORTING	Noprianto, S.Kom.,	M.Eng				
LECTURER						
ASSESSMENT FORMS						
UTS						
ASSESSMENT TITLE						
UTS (IoT Project Follow Up)						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand	material 1-8					
DESCRIPTION						
Stages of creating an IoT projec	t for the final project					
WORKING METHOD						
LMS						
OUTER FORMAT						
UTS Student Draft Paper						
INDICATORS, CRITERIA A	ND WEIGHT ASSE	ESSMENT				
Conformity of answers	: 100%	)				
The weight for Quiz 2 is 30% of 100% for this course						
IMPLEMENTATION SCHEI	DULE					
8th week			150 minutes			
OTHERS REQUIRED:						
REFERENCES						

1.	Arduino Programming For Beginners, 2019, Jasakom
2.	Smart Attendance with Smart Card and Fingerprint, 2021, Polinema Press

	MALANG STATI	E POLYTECHNIC					
LENNIK NEGERI MAR	INFORMATION	TECHNOLOGY DEPARTM	IENT				
( ) O A A A A A A A A A A A A A A A A A A	STUDY PROGRA	M : D4 INFORMATICS EN	GINEERING				
	ASSESSMENT METHOD						
SUBJEC	<b>INTERNET OF T</b>	HINGS					
CODE	RTI196005	WEIGHT (credits) / hour	3 credits/ 6 hours	SEMESTER	1		
SUPPORTING	Noprianto, S.Kom.	, M.Eng					
LECTURER							
ASSESSMENT FORMS							
UAS							
ASSESSMENT TITLE							
UAS (IoT Project)							
SUB COURSE LEARNING A	CHIEVEMENTS						
Students are able to understand	the material in weeks	s 1 to 16					
DESCRIPTION							
IoT Final Project							
Make an IoT project to solve cer	rtain cases, complete	from the controller/smart devi	ice to the monitoring syst	em dashboard, the project is	s a follow-up to the Quiz 1, Quiz 2, and UTS		
draft papers that were made. So	ne of the provisions	that must be carried out are as	follows				
• Projects must be done i	n groups (5%)						
• The proposed system ca	an be seen in <i>the clos</i>	ud(online)(30%)					
Monitoring and control	lling use Node-RED	and message brokers use brok	er servers that are manage	ed or self-configured. For ex	ample using Mosquitto, RabbitMQ, Kafka, and		
similar (10%)							
• Presented in groups with	th a specified schedu	le (20%)					
• The program code mus	t be stored in the rep	ository, while the project demo	video and uploaded on Y	ouTube (10%)			
• Make a final report in s	cientific article form	at (25%)					
WORKING METHOD							
Group							
OUTER FORMAT	OUTER FORMAT						
Project							
INDICATORS, CRITERIA A	ND WEIGHT ASS	ESSMENT					
Conformity of answers	: 100%	0					

The weight for Quiz 2 is 30% of 100% for this course

# IMPLEMENTATION SCHEDULE

17th week

#### **OTHERS REQUIRED:**

### REFERENCES

1. Arduino Programming For Beginners, 2019, Jasakom

2. Smart Attendance with Smart Card and Fingerprint, 2021, Polinema Press

# ASSESSMENT AND EVALUATION PLAN

#### **Computer network**

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students can explain the role and influence of data communication &amp; computer networks in everyday life. (C2)</li> <li>Students can explain the components that make up computer networks and types of computer networks (C2)</li> </ul>	<ul> <li>Definition of Computer Networks</li> <li>Influence of Computer Networks</li> <li>Basic Communication</li> <li>Computer Network Components</li> <li>Types of Computer Networks</li> <li>Computer Network General Symbol</li> </ul>	<ul> <li>Oral test</li> <li>Quiz 1 (4 questions)</li> <li>UTS (6 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 10% Quiz: 20% UTS: 2 0%
2	<ul> <li>Students can explain the function of network protocols (C2)</li> <li>Students can explain the advantages of using the OSI and TCP layered models and the basic functions of each layer (C2)</li> <li>Students can understand and explain the addresses used in network work (C2)</li> </ul>	<ul> <li>Network Protocol</li> <li>Model/Layered Use</li> <li>Network addressing</li> </ul>	<ul> <li>Oral test</li> <li>Quiz 1 (4 questions)</li> <li>UTS ( 6 questions)</li> <li>UAS ( 2 questions)</li> </ul>	

150 minutes

3	Students can explain the functions, processes that occur and the types of protocols that exist in the upper layers of the OS and TCP models (C2)	<ul> <li>Application Layer - Interface between networks</li> <li>Client-Server and Peer-to-peer</li> <li>Application and Service layer protocols:         <ul> <li>DNS</li> <li>WWW and HTTP</li> <li>E-mail</li> <li>FTP</li> <li>DHCP</li> <li>File Sharing</li> </ul> </li> </ul>	<ul> <li>Oral test</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
4	Students can explain the functions & roles of the Transport layer, as well as the TCP and UDP protocols. (C2)	<ul> <li>Telnet</li> <li>Uses of the Transport Layer</li> <li>Transport Layer Protocol Type</li> <li>Port Address</li> </ul>	<ul> <li>Oral test</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
5	Students can explain the functions of the Network layer, addressing, and routing functions (C2)	<ul> <li>Address</li> <li>Encapsulation</li> <li>Routing</li> <li>Decapsulation</li> <li>Network Layer Protocol</li> </ul>	<ul> <li>Oral test</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
6		Quiz 1		
7 -8	Students can understand and explain the structure and type and use of IPv4 addresses on networks (C2)	<ul> <li>IPv4 address</li> <li>IPv4 Types and Uses</li> <li>Calculation and Allocation of IPv4 for the network</li> </ul>	<ul> <li>Task 1</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
9		UTS		
10	Students can explain the role of the DataLink layer of the OSI model, the physical addressing of network devices and network topology logically. (C2)	<ul> <li>Network Media Access Service</li> <li>Local Media Transfer Control</li> <li>DataLink Layer Frames</li> <li>Connecting the Upper Layer to the Media</li> <li>Data Link Layer Protocol</li> <li>Physical Addressing</li> <li>Network Topology</li> </ul>	<ul> <li>Oral test</li> <li>Quiz 2 (10 questions)</li> <li>UAS (7 questions)</li> </ul>	Task 2: 10% Quiz: 20% UAS: 2 0%
11	Students can explain the physical media used in computer network communications, the protocols and services that exist at the	<ul><li>Communication Signals</li><li>Signaling and Coding</li></ul>	<ul><li>Oral test</li><li>Quiz 2 (10 questions)</li></ul>	

12	physical layer and the use of signal bits that represent data frames. (C2)	<ul> <li>Computer Network Capacity Measurement</li> <li>Physical Media</li> <li>Wireless Media and Technology</li> </ul>	• UAS ( 7 questions)	
13	Students can identify and explain media requirements, connection types, devices needed to build computer networks (C2)	<ul> <li>Selection of Physical Connections - devices and their selection factors</li> <li>Selection of LAN and WAN topologies</li> <li>Address Allocation</li> <li>Subnet Calculation</li> </ul>	<ul> <li>Oral test</li> <li>UAS (7 questions)</li> </ul>	
14 -15 <b>1 6</b>	Students can explain how to use and configure basic routers and static routing (C2)	<ul> <li>Cisco IOS</li> <li>IOS Configuration and Mode Files</li> <li>Basic IOS Command Structure</li> <li>Network Connectivity Testing UAS</li> </ul>	<ul> <li>Task 2</li> <li>UAS (7 questions)</li> </ul>	
	•	TOTAL WEIGHT		100%

LUNIK NEGERI AT	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SUBJECT	Computer network				
CODE	RTI20 4006 WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3	
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M.Kom.				
	Yuri Ariyanto, S.Kom., M.Kom.				
	Kadek Suarjuna Batubulan, S.Kom., MT				
	Sofyan Noor Arief, SST., M.Kom.				
ASSESSMENT FORMS					
Online test					
ASSESSMENT TITLE					
Quiz 1					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students can explain the role and influen	ice of data communication & computer networks in everyday life. (C2)				
Students can explain the components that	t make up computer networks and types of computer networks (C2)				
Students can explain the function of network	vork protocols (C2)	<b>n</b> )			
Students can explain the advantages of u	sing the OSI and TCP layered models and the basic functions of each layer (C2 addresses used in network work (C2)	2)			
Students can explain the functions proce	addresses used in network work (C2)	)S and TCP models (	(C2)		
Students can explain the functions, proce	es of the Transport layer as well as the TCP and UDP protocols (C2)		(2)		
Students can explain the functions of the	Network layer, addressing, and routing functions (C2)				
DESCRIPTION					
Answer quiz questions from meeting ma	terial 1-5				
WORKING METHOD					
The questions are done through TCExan	1				
OUTER FORMAT					
Work Object: Quiz 1					
Outer Form: student quiz answers					
INDICATORS, CRITERIA AND WE	IGHT ASSESSMENT				
Conformity of answers: 10 0 %					
The weight for Quiz 1 is 20 % of 100% for this course					
IMPLEMENTATION SCHEDULE		10.0	•		
Week 6		10 0 r	ninutes		

OTHE	ERS REQUIRED:
REFE	RENCES
1.	James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011
2.	Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007

	MALANG STATE POLYTECHNIC					
	INFORMATION TECHNOLOGY DEPARTMENT					
1 that NEGERINA	STUDY PROGRAM: D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJECT	Computer network					
CODE	RTI20 4006 WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3		
SUPPORTING LECTURER	Arief Prasetvo, S.Kom., M.Kom.	2 crouits / Thouis	SEMESTER	5		
	Vuri Arivanto S Kom M Kom					
	Kadek Suariuna Batubulan S Kom MT					
	Sofuen Noor Arief SST M Kem					
ASSESSMENT FORMS	Sofyan Noor Arier, 551., W.Kom.					
Online test						
ASSESSMENT TITLE						
Ouiz 2						
SUB COURSE LEARNING ACHIEV	/EMENTS					
Students can explain the role of the Data	Link layer of the OSI model, the physical addressing of network devices and	network topology logical	ly. (C2)			
Students can explain the physical media	used in computer network communications, the protocols and services that ex	tist at the physical layer a	nd the use of signal bits that	t represent		
data frames. (C2)						
DESCRIPTION						
Answering quiz questions from meeting	material 10-11					
WORKING METHOD						
The questions are done through TCExar	<u>n</u>					
OUTER FORMAT						
Work Object: Quiz 2						
INDICATORS CRITERIA AND WE	MOUT ASSESSMENT					
Conformity of answers: 10.0 %	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
The weight for Ouiz 2 is 20 % of 100% for this course						
IMPLEMENTATION SCHEDULE						
Week 12		10 0 min	utes			
OTHERS REQUIRED:						
REFERENCES						
1. James F. Kurose & Keith Ross	, "Computer Networking : A Top-Down Approach Featuring the Internet" Adv	dison-Wesley, 2011				
2. Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007						

	MALANG STATE POLYTECHNIC			
	INFORMATION TECHNOLOGY DEPARTMENT			
ANNIK NEGERIA	STUDY PROGRAM: D4 INFORMATICS ENGINEERING			
A CONTRACTOR OF				
	ASSESSMENT METHOD			
SUBJECT	Computer network			
CODE	RTI20 4006 WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M.Kom.	·	·	
	Yuri Ariyanto, S.Kom., M.Kom.			
	Kadek Suariuna Batubulan, S.Kom., MT			
	Sofvan Noor Arief, SST., M.Kom.			
ASSESSMENT FORMS				
Online test				
ASSESSMENT TITLE				
UTS				
SUB COURSE LEARNING ACHIEV	EMENTS			
Students can explain the role and influen	ice of data communication & computer networks in everyday life. (C	2)		
Students can explain the components that	at make up computer networks and types of computer networks (C2)			
Students can explain the function of netv	vork protocols (C2)			
Students can explain the advantages of u	ising the OSI and TCP layered models and the basic functions of each	h layer (C2)		
Students can understand and explain the	addresses used in network work (C2)			
Students can explain the functions, proce	esses that occur and the types of protocols that exist in the upper laye	C2 and TCP models (C2)		
Students can explain the functions & fold	es of the Transport layer, as well as the TCP and UDP protocols. (C2)	.)		
Students can explain the functions of the	structure and type and use of IPv4 addresses on networks (C2)			
DESCRIPTION	structure and type and use of it v4 addresses on networks (C2)			
Answer UTS questions from meeting ma	aterial 1-8			
WORKING METHOD				
The questions are done through TCExam				
OUTER FORMAT				
Work Object: UTS				
Outcome Form: UTS student answers				
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
Conformity of answers: 10 0 %				
The UTS assessment weight is 20 % of 100% of the assessment for this course				
IMPLEMENTATION SCHEDULE				

9th we	10 0 minutes
OTHE	ERS REQUIRED:
REFE	RENCES
1.	James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011
2.	Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007

	MALANC STATE DOLY	VTECHNIC			
	MALANG STATE POLYTECHNIC INFODMATION TECHNOLOCV DEDADTMENT				
ANNIK NEGERIA	STUDY PROGRAM: D4	INFORMATICS ENGINEERING			
		ASSESSMENT METHOD			
SUBJECT	Computer network				
CODE	RTI20 4006	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	3
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M	.Kom.			
	Yuri Ariyanto, S.Kom., M	.Kom.			
	Kadek Suariuna Batubular	n. S.Kom., MT			
	Sofvan Noor Arief SST	MKom			
ASSESSMENT FORMS					
Online test					
ASSESSMENT TITLE					
UUS					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students can explain the role and influer	nce of data communication &	computer networks in everyday life. (C2)			
Students can explain the components that	at make up computer network	ts and types of computer networks (C2)			
Students can explain the function of network	work protocols (C2)				
Students can explain the advantages of u	ising the OSI and TCP layere	ed models and the basic functions of each layer	· (C2)		
Students can understand and explain the	addresses used in network w	vork (C2)			
Students can explain the functions, proc	esses that occur and the type	s of protocols that exist in the upper layers of t	he OS and TCP models (C2	2)	
Students can explain the functions & rol	es of the Transport layer, as	well as the TCP and UDP protocols. (C2)			
Students can explain the functions of the	e Network layer, addressing,	f IDv4 addresses on networks (C2)			
Students can understand and explain the Students can explain the role of the Data	Link layer of the OSI model	the physical addressing of network devices a	nd network topology logical	$11_{\rm W}$ (C2)	
Students can explain the physical media used in computer network communications, the protocols and services that exist at the physical layer and the use of signal bits that represent					
data frames (C2)					
Students can identify and explain media requirements, connection types, devices needed to build computer networks (C2)					
Students can explain how to use and configure basic routers and static routing (C2)					
DESCRIPTION					
Answer U A S questions from meeting r	naterial 1-15				
WORKING METHOD					
The questions are done through TCExam					
OUTER FORMAT					
Job Object: U A S					

Outcome Form: U A S student answers		
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT		
Conformity of answers: 10 0 %		
The UTS assessment weight is 20 % of the 100 % assessment for this course		
IMPLEMENTATION SCHEDULE		
Week 16	10 0 minutes	
OTHERS REQUIRED:		
REFERENCES		
1. James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley,	, 2011	
2. Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007		

#### ASSESSMENT AND EVALUATION PLAN

### **Computer Network Practicum**

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students know the types of network cables (C1)</li> <li>Students can prepare UTP cable (C3)</li> <li>Students use UTP cable. (C3)</li> <li>Students are able to test UTP cable (C4)</li> </ul>	<ul> <li>Kinds and Types of Network Cables</li> <li>Cable Straight through, Crossover, rollover</li> <li>LAN tester</li> </ul>	<ul> <li>Practicum 1</li> <li>Quiz 1 (4 questions)</li> <li>UTS (6 questions)</li> <li>UAS (2 questions)</li> </ul>	Practicum 1: 5% Practicum 2: 5% Practicum 3: 5% Practicum 4: 5% Practicum 5: 5%
2	<ul> <li>Students are able to install NIC (C3)</li> <li>Students are able to configure the NIC to get configuration parameters from the DHCP server or manually (C3)</li> </ul>	<ul> <li>NIC identification</li> <li>Identification of PC Hardware</li> <li>Dynamic IP client configuration</li> <li>Troubleshooting Clients</li> </ul>	<ul> <li>Practicum 2</li> <li>Quiz 1 (4 questions)</li> <li>UTS ( 6 questions)</li> <li>UAS ( 2 questions)</li> </ul>	Practicum 6: 5% Quiz: 10% UTS: 1 0%
3	Students are able to use several Application layer protocols in the network (C3)	<ul> <li>DNS - dig, nslookup</li> <li>FTP</li> <li>Telnet</li> <li>SSH</li> </ul>	<ul> <li>Practicum 3</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
4	Students are able to use network tools to observe how Transport layer protocols (C3) work	<ul> <li>TCP-3 way handshake</li> <li>UDP client processes</li> <li>Netstat and Nmap</li> <li>Catch and identify TCP packets with WireShark</li> </ul>	<ul> <li>Practicum 4</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
5	<ul> <li>Students know the Ping tool and route (C1)</li> <li>Students can use Ping and route (C3)</li> <li>Students can analyze network problems with Ping and route tools (C4)</li> </ul>	<ul> <li>Workstation basic configuration</li> <li>View configuration results</li> <li>Ping utility</li> <li>Route utility</li> </ul>	<ul> <li>Practicum 5</li> <li>Quiz 1 (4 questions)</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
6		Quiz 1		
7 -8 9	Students can do network subnetting (C3)	<ul> <li>Class A subnetting</li> <li>Class B subnetting</li> <li>Class C subnetting</li> <li>UTS</li> </ul>	<ul> <li>Practicum 6</li> <li>UTS (7 questions)</li> <li>UAS (2 questions)</li> </ul>	
10	• Students know the ping and traceroute tools in observing the path to a certain host (C1)	• Traceroute	<ul> <li>Practicum 7</li> <li>Quiz 2 (6 questions)</li> <li>UAS (7 questions)</li> </ul>	Practicum 7: 5% Practicum 8: 5%
	• Students can use the ping and traceroute tools to observe paths to certain hosts (C3)			Practicum 9: 5% Practicum 10: 5% Practicum 11: 5%
-------	-------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------	---------------------------------------------------------
11	<ul> <li>Students know the ARP tool (C1)</li> <li>students can use the ARP Tool (C3)</li> </ul>	• ARP	<ul> <li>Practicum 8</li> <li>Quiz 2 (6 questions)</li> <li>UAS (7 questions)</li> </ul>	Quiz 2: 10% UAS: 15 %
12	Students can configure Access Points, install wifi adapters and connect wirelessly (C3)	<ul> <li>Wireless media:</li> <li>Installing wireless adapters</li> <li>Access Point Configuration</li> <li>wifi connection</li> </ul>	<ul> <li>Practicum 9</li> <li>Quiz 2 (8 questions)</li> </ul>	
13		Quiz 2		
14	Students are able to design a local network (C6)	<ul> <li>Local Network Design</li> <li>Analysis and design of device requirements</li> <li>Address allocation analysis and design</li> </ul>	<ul> <li>Practicum 10</li> <li>UAS (7 questions)</li> </ul>	
15-16	Students are able to configure routers with basic commands and static routing (C3)	Router Configuration <ul> <li>Name</li> <li>Passwords</li> <li>Interfaces</li> </ul>	<ul> <li>Practicum 11</li> <li>UAS (7 questions)</li> </ul>	
		TOTAL WEIGHT		100%

Transferration of the second s	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD				
SUBJECT	Computer network				
CODE	RTI20 4007WEIGHT (credits) / hour	2 credits / 6 hours	SEMESTER	3	
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M.Kom.				
	Yuri Ariyanto, S.Kom., M.Kom.				
	Kadek Suarjuna Batubulan, S.Kom., MT				
	Sofyan Noor Arief, SST., M.Kom.				
ASSESSMENT FORMS					
Online test					
ASSESSMENT TITLE					
Quiz 1					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students know the types of network cab	les (C1)				
Students can prepare UTP cable (C3)					
Students use UTP cable. $(C3)$					
Students are able to install NIC (C3)					
Students are able to configure the NIC to	o get configuration parameters from the DHCP server or manually (C3)				
Students are able to use several Applica	tion layer protocols in the network (C3)				
Students are able to use network tools to	observe how Transport layer protocols (C3) work				
Students know the Ping tool and route (	C1)				
Students can use Ping and route (C3)					
Students can analyze network problems with Ping and route tools (C4)					
DESCRIPTION					
Answer quiz questions from meeting material 1-5					
WORKING METHOD					
The questions are done through TCExam					
OUTER FORMAT					
Work Object: Quiz 1					
Outer Form: student quiz answers					
Conformity of anguages 10.0.9/	AGUT VƏSFƏSMENT				
Conformity of answers: 100 %					

The we	ight for Quiz 1 is 10 % of 100% for this course
IMPLE	IMENTATION SCHEDULE
Week 6	10 0 minutes
OTHE	RS REQUIRED:
REFEF	RENCES
1.	James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011
2.	Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007
3.	Raphael Hertzog & Roland Mas, "The Debian Administrator's Handbook". Freexian, October 2015.

	MALANG STATE POLYTECHNIC				
	INFORMATION TECHNOLOGY DEPARTMENT				
1 thuik NEGERIA	STUDY PROGRAM: D4 INFORMATICS ENGINEERING				
	ACCECCMENT METHOD				
SUDIECT	ASSESSMENT METHOD				
	DTI20 4007 WEICHT (gradita) / hour	2 gradita / 6 hours	SEMESTED	2	
SUDPODTING LECTUDED	Ariof Dresotue S Kom, M Kom	2 creatis / 0 nours	SENIESTER	3	
SUFFORTING LECTURER	Ariel Flaselyo, S.Kolli, MI.Kolli.				
	Y uri Ariyanto, S.Kom., M.Kom.				
	Kadek Suarjuna Batubulan, S.Kom., MT				
	Sofyan Noor Arief, SST., M.Kom.				
ASSESSMENT FORMS					
Online test					
ASSESSMENT TITLE					
Quiz 2					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students know the ping and traceroute to	bols in observing the path to a certain host (C1)				
Students can use the ping and traceroute	tools to observe paths to certain hosts (C3)				
Students know the ARP tool (C1)					
Students can use the ARP Tool (C3)	actall wife a domtors and commant winalacaly (C2)				
DESCRIPTION	Istan will adapters and connect wirelessly (C3)				
Answer quiz questions from mosting me	starial 10, 12				
WORKING METHOD					
The questions are done through TCEvar	n				
OUTER FORMAT	.1				
Work Object: Ouiz 2					
Outer Form: student guiz answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers: 10.0 %					
The weight for Quiz 2 is 10 % of 100% for this course					
IMPLEMENTATION SCHEDULE					
Week 13	Week 13 10 0 minutes				
OTHERS REQUIRED:					
REFERENCES	REFERENCES				

- James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011 Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007 Raphael Hertzog & Roland Mas, "The Debian Administrator's Handbook". Freexian, October 2015. 1.
- 2. 3.

CULUM NEGERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY D STUDY PROGRAM: D4 INFORMA	EPARTMENT TICS ENGINEERING			
	AS	SESSMENT METHOD			
SUBJECT	Computer network				
CODE	RTI20 4007 WEIG	HT (credits) / hour	2 credits / 6 hours	SEMESTER	3
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M.Kom.				
	Yuri Ariyanto, S.Kom., M.Kom.				
	Kadek Suarjuna Batubulan, S.Kom., M	Г			
	Sofyan Noor Arief, SST., M.Kom.				
ASSESSMENT FORMS	•				
Online test					
ASSESSMENT TITLE					
UTS					
SUB COURSE LEARNING ACHIEV	EMENTS				
Students know the types of network cab	es (C1)				
Students can prepare UTP cable (C3)					
Students use UTP cable. (C3)					
Students are able to test U IP cable $(C4)$					
Students are able to install NIC (C3) Students are able to configure the NIC $t_{i}$	a set configuration nerometers from the D	$\mathbf{HCD}$ some or monually (C2)			
Students are able to use several Applicat	ion layer protocols in the network $(C_3)$	HCF server of manually (C3)			
Students are able to use network tools to	observe how Transport layer protocols (	(3) work			
Students know the Ping tool and route (	C1)				
Students know the Fing tool and route (C1) Students can use Ping and route (C3)					
Students can analyze network problems with Ping and route tools (C4)					
Students can do network subnetting (C3)					
DESCRIPTION					
Answer quiz questions from meeting material 1-8					
WORKING METHOD					
The questions are done through TCExam					
OUTER FORMAT					
Work Object: UTS					
Outer Form: student quiz answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					

Confor	mity of answers: 10 0 %	
UTS as	sessment weight is 10 % of 100% of the assessment for this course	
IMPL	EMENTATION SCHEDULE	
Week 9		10 0 minutes
OTHE	RS REQUIRED:	
REFE	RENCES	
1.	James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley,	2011
2.	Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007	
3.	Raphael Hertzog & Roland Mas. "The Debian Administrator's Handbook", Freexian, October 2015.	

Julik NEGERIA	MALANG STATE POLYT INFORMATION TECHNO STUDY PROGRAM: D4 IN	ECHNIC LOGY DEPARTMENT FORMATICS ENGINEERING			
		ASSESSMENT METHOD			
SUBJECT	Computer network				
CODE	RTI20 4007	WEIGHT (credits) / hour	2 credits / 6 hours	SEMESTER	3
SUPPORTING LECTURER	Arief Prasetyo, S.Kom., M.Ko	om.			
	Yuri Ariyanto, S.Kom., M.Ko	m.			
	Kadek Suarjuna Batubulan, S.	Kom., MT			
	Sofyan Noor Arief, SST., M.H	Kom.			
ASSESSMENT FORMS	<b></b>				
Online test					
ASSESSMENT TITLE					
UAS					
SUB COURSE LEARNING ACHIEV	<b>EMENTS</b>				
Students know the types of network cables (C1)					
Students can prepare UTP cable (C3)					
Students use UTP cable. (C3)					
Students are able to test UTP cable (C4)					
Students are able to install NIC (C3)		the DUCD common or more aller (C2)			
Students are able to use several Application	tion lower protocols in the netwo	rb (C3) rb (C3)			
Students are able to use network tools to	observe how Transport layer p	ratocols (C3) work			
Students know the Ping tool and route (	C1)	otocols (C5) work			
Students can use Ping and route (C3)					
Students can analyze network problems with Ping and route tools (C4)					
Students can do network subnetting (C3)					
Students know the ping and traceroute tools in observing the path to a certain host (C1)					
Students can use the ping and traceroute tools to observe paths to certain hosts (C3)					
Students know the ARP tool (C1)					
Students can use the ARP Tool (C3)					
Students can configure Access Points, install wifi adapters and connect wirelessly (C3)					
Students are able to design a local network (C6)					
Students are able to configure routers with basic commands and static routing (C3)					
DESCRIPTION	DESCRIPTION				

Answer quiz questions from meeting materials 1-16
WORKING METHOD
The questions are done through TCExam
OUTER FORMAT
Work Object: UAS
Outer Form: student quiz answers
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT
Conformity of answers: 10 0 %
UAS assessment weight is 15 % of 100% of the assessment of this course
IMPLEMENTATION SCHEDULE
Week 17 10 0 minutes
OTHERS REQUIRED:
REFERENCES
1. James F. Kurose & Keith Ross, "Computer Networking : A Top-Down Approach Featuring the Internet" Addison-Wesley, 2011
2. Cisco Systems, Inc." CCNA Exploration I : Network Fundamentals". Indianapolis: Cisco Press, 2007
3. Raphael Hertzog & Roland Mas, "The Debian Administrator's Handbook". Freexian, October 2015.

## ASSESSMENT AND EVALUATION PLAN

# Project management

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students can understand the concept of project management in general and can understand the life cycle of a project	<ol> <li>5. Project management</li> <li>6. IS project life cycle</li> <li>7. Project relationship with the organization</li> <li>8. Profession in project management</li> </ol>	<ul> <li>Results of group discussions</li> <li>Case analysis in software projects</li> <li>Quiz 1 (5 questions)</li> <li>UTS (2 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 5% Task 2: 5% Group discussion : 8% Quiz 1: 1 2 % UTS: 2 0 %
2	• Students can understand the roles and functions of each personnel associated with the PL Project	<ol> <li>Understanding the organizational structure of the project</li> <li>Project implementers</li> <li>The roles and functions of personnel in the project</li> </ol>	<ul> <li>Discuss the roles and functions of personnel in an PL project and form a small organization in a group according to the PL project activities</li> <li>Quiz 1 (5 questions)</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
3	Students can prepare software project proposals (SCRUM)	<ul> <li>Definition of business cases</li> <li>Project proposal templates</li> <li>Terms of reference</li> </ul>	<ul> <li>Task 1 : Design a software project proposal that defines what will be done, business needs, TOR, expected results etc. (proposal template will be provided)</li> <li>Quiz 1 (5 questions)</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
4		Quiz 1		
5	• Students are able to plan a project management	<ul> <li>Basic project management plan</li> <li>Develop an integrated project management plan</li> <li>Create a project management plan template</li> </ul>	<ul> <li>Discussion: Develop a project management plan, the contents of the project management plan</li> <li>UTS (2 questions)</li> <li>UAS (2 questions)</li> </ul>	
6	• Students are able to plan PL project scope management	<ul> <li>Project scope basics</li> <li>Process of Gathering Requirements</li> <li>The process of defining scope n</li> <li>The process of compiling a work breakdown structure and dictionary</li> <li>Using Microsoft Project to create a Work Breakdown Structure</li> </ul>	<ul> <li>Arranging project scope by using microsoft project to define process scope</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	

7	Students are able to plan PL project time management	<ul> <li>Project time management plan</li> <li>The process defines project activities</li> <li>Process sequencing activities</li> <li>The process of estimating project resource requirements</li> <li>The process determines the duration of the activity</li> <li>The process of compiling a project activity schedule with Ms. Project UTS</li> </ul>	<ul> <li>Task 2: Arrange time management in PL/duration projects using Microsoft Project</li> <li>UTS (3 questions)</li> <li>UAS (3 questions)</li> </ul>	
9	Students are able to plan cost management in PL projects	<ul> <li>Project cost management plan</li> <li>The process of estimating activity costs</li> <li>The process of preparing a project budget</li> <li>Compile a project budget with Ms.Excel (template) Develop project budget with Ms. software . Project</li> </ul>	<ul> <li>Discussion: Arranging budget management in PL/duration projects using Microsoft Project</li> <li>Quiz 2 (3 questions)</li> <li>UAS (3 questions)</li> </ul>	Task 1: 5% Task 2: 5% Discussion : 10% Quiz 2: 1 0 % U A S: 2 0 %
10	• Students are able to plan HR management in PL projects	<ul> <li>Project HR management</li> <li>Project HR management plan</li> <li>The process of planning project HR Develop a project HR management plan using the template provided</li> </ul>	<ul> <li>Discussion: Arranging HR management in PL/duration projects using microsoft project (1x50')</li> <li>Quiz 2 (3 questions)</li> <li>UAS (4 questions)</li> </ul>	
11	• Quiz 2			
12	• Students are able to plan cost management in PL projects	<ul> <li>Project cost management plan</li> <li>The process of estimating activity costs</li> <li>The process of preparing a project budget</li> <li>Compile a project budget with Ms.Excel (template)</li> <li>Develop project budget with Ms. software . Project</li> </ul>	<ul> <li>Task 3: Arrange communication management in the PL/duration project using the prepared template</li> <li>UAS (3 questions)</li> </ul>	

15	management in PL projects     Students are able to plan risk     management in PL projects	<ul> <li>planning</li> <li>Workshop on making a project</li> <li>communication management plan</li> <li>Risk management plan</li> <li>The process of identifying risks</li> <li>The process of conducting a qualitative risk analysis</li> <li>The process of conducting a</li> </ul>	<ul> <li>results of monitoring time and costs in PL projects</li> <li>UAS (3 questions)</li> <li>Discussion: Making reports on the results of HR monitoring and communication in PL projects</li> <li>UAS (3 questions)</li> </ul>	
		<ul> <li>quantitative risk analysis</li> <li>The process of determining responses to risk</li> <li>Compile project register Workshop on preparing a project risk management plan</li> </ul>		
16	• Students are able to monitor and control time and costs in PL projects	<ol> <li>The concept of supervising the implementation of the project schedule and budget of the PL project</li> <li>Techniques for controlling schedules and costs (PV curves, EV, schedule performance index, crashing) Using MS project to control schedule and cost in PL project</li> </ol>	<ul> <li>Task 4: Prepare the final PL project report along with the attachments to the PL project report</li> <li>UAS (3 questions)</li> </ul>	
17		UAS		
17		UAS TOTAL WEIGHT		100%

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### MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

	ASSESSMENT METHOD							
SUBJECT	Project management	t						
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4			
SUPPORTING			·					
LECTURER								
ASSESSMENT FORMS								
Quiz 1								
ASSESSMENT TITLE								
Quiz material 1-3								
SUB COURSE LEARNING A	CHIEVEMENTS							
Students can understand the con	cept of project manag	gement						
Students can understand the role	es and functions of per	rsonnel						
Students can compile software p	proposals							
DESCRIPTION								
Students can understand the con	cept of project manag	gement						
Students can understand the role	es and functions of per	rsonnel						
Students can compile software p	proposals							
DESCRIPTION								
6. Answer Quiz questions relat	ted to project manager	ment concepts, personnel func	tions and PL proposals /	case study presentation	S			
WORKING METHOD								
• The questions are done through e-learning lms.polinema.ac.id								
Quiz done in 35 minu	tes							
OUTER FORMAT								
<ul> <li>Job Object: Quiz</li> </ul>								
Output Form: Student Quiz answers / Case study presentation								
IMPLEMENTATION SCHEI	DULE							
4th week			35 minutes					

## **OTHERS REQUIRED:**

## REFERENCES

- Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices .
- Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology



MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

#### **ASSESSMENT METHOD**

SUBJECT	Project managemen	t			
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4

SUPPORTING	
ASSESSMENT FORMS	
Ouiz 2	
ASSESSMENT TITLE	
Ouiz material 9-10	
SUB COURSE LEARNING ACI	HIEVEMENTS
Students can understand and plan of Students can understand and plan H	cost management in PL projects HR management in PL projects
DESCRIPTION	
Answering Quiz questions related	to project management concepts in the form of costs and HR/ Presentation
WORKING METHOD	
<ul> <li>The questions are done th</li> <li>Quiz done in 35 minutes</li> <li>If the presentation is held</li> </ul>	rough e-learning lms.polinema.ac.id for 15 minutes
OUTER FORMAT	
I. Job Object: Quiz J. Output Form: student Quiz ans	swers/ presentations
INDICATORS, CRITERIA ANI	) WEIGHT ASSESSMENT
Conformity of answers	: 100%
Quiz 1 assessment weight is 12% of	of 100% assessment of this course
<b>IMPLEMENTATION SCHEDU</b>	LE
11th week	35 minutes
OTHERS REQUIRED:	
REFERENCES	
<ul> <li>Murali Chemuturi, Thoma</li> <li>Kathy Schwalbe, 2009, In</li> </ul>	as M. Cagley, 2010, Mastering Software Project Management: Best Practices . formation Technology Project Management, 6th Edition, Course Technology

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### MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

		ASSI	ESSMENT METHOD			
SUBJECT	Project managemen	t				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Midterm exam						
ASSESSMENT TITLE						
UTS material 1-7						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students can understand the con	cept of project manag	gement				
Students can understand the roles and functions of personnel						
Students can compile software proposals						
Students are able to plan a project management						
Students are able to plan PL project scope management						
Students are able to plan PL pro	ject time managemen	t				

DESCRIPTION					
Answer UTS questions related to the concept of project management					
WORKING METHOD					
• The questions are done through e-learning lms.polinema.ac.id					
• UTS is done in 60 minutes					
OUTER FORMAT					
Work Object: UTS					
Outcome Form: UTS student answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
The UTS assessment weight is 20% of 100% of the assessment for this course					
IMPLEMENTATION SCHEDULE					
8th week	60 minutes				
OTHERS REQUIRED:					
REFERENCES					
Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices .					
Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology					



MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT STUDY PROGRAM : D4 INFORMATICS ENGINEERING

ASSESSMENT METHOD						
SUBJECT	Project managemer	nt				
CODE	RTI	WEIGHT (credits) / hour	3 credits / 6 hours	SEMESTER	4	
SUPPORTING						
LECTURER						
ASSESSMENT FORMS						
Final exams						
ASSESSMENT TITLE						
UAS material 1-7						
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to plan cost ma	anagement in PL pro	jects				
Students are able to plan HR ma	nagement in PL proj	ects				
Students are able to plan cost ma	anagement in PL pro	jects				
Students are able to plan HR ma	nagement in PL proj	ects				
Students are able to plan commu	inication managemen	nt in PL projects				
Students are able to plan risk ma	inagement in PL proj	lects				
Students are able to monitor and	control time and cos	sts in PL projects				
DESCRIPTION	1					
Answer UAS questions related t	o the concept of proj	ect management				
WORKING METHOD						
• The questions are done	through e-learning li	ms.polinema.ac.id				
UTS is done in 35 minu	ıtes					
OUTER FORMAT						
Work Object: UAS						
Outcome Form: studen	t UAS answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers	: 100%	6				
The UTS assessment weight is 2	20% of $100%$ of the a	assessment for this course				
IMPLEMENTATION SCHEI	DULE					
8th week			35 minutes			
<b>OTHERS REQUIRED:</b>						
REFERENCES						

- Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices .
- Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology

# ASSESSMENT AND EVALUATION PLAN

# Religion

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	Students are able to live up to the vision of Islamic Religious Education in Public Higher Education (M1)	<ul> <li>&gt; RPS and Lecture Contracts</li> <li>&gt; INTRODUCTION:</li> <li>&gt; Vision of Religious Education</li> <li>&gt; Course Description</li> <li>&gt; Lecture Approach</li> <li>&gt; Lecture Rules</li> </ul>		Individual Tasks : 15% Group Assignment : 15% Quiz 1 : 10% Quiz 2 : 10% UTS : 20% UAS : 30%
2	Students are able to build the character that religion is a need and human nature (M1)	<ul> <li>PEOPLE AND RELIGION</li> <li>Religion and Islam concept</li> <li>Religion Human Needs</li> <li>Dimensions of Islamic Teachings</li> <li>Methods of Understanding Islam</li> <li>Islamic Religious Mission</li> <li>The Future of Religion</li> </ul>		
3	Students are able to build the character that religion is a need and human nature (M1)	<ul> <li>PEOPLE AND RELIGION</li> <li>Religion and Islam concept</li> <li>Religion Human Needs</li> <li>Dimensions of Islamic Teachings</li> <li>Methods of Understanding Islam</li> <li>Islamic Religious Mission</li> <li>The Future of Religion</li> </ul>		
4		Quiz 1		

5	Students are able to explain the concept of monotheism as the basic principle of Muslim life and explain the differences in views of life between monotheism and shirk (M1)	THE CONCEPT OF TAUHID         > Monotheism of Human Needs         > Human Problems: Shirk         > Impact of Tawhid	-
6	nature and its function in life according to Islam (M2)	<ul> <li>HUMAN CONCEPT</li> <li>Humans in Islamic view</li> <li>Functions and Duties of human life</li> <li>The Reality of the Life of the World and the Hereafter</li> </ul>	
7	Students are able to understand human nature and its function in life according to Islam (M2)	<ul> <li>HUMAN CONCEPT</li> <li>➢ Humans in Islamic view</li> <li>➢ Functions and Duties of human life</li> <li>➢ The Reality of the Life of the World and the Hereafter</li> </ul>	
8		UTS	
9	Students are able to explain the important meaning of Islamic views on environmental sustainability and its relationship with the environment where students work (M3)	<ul> <li>ECOLOGICAL INSIGHTS IN ISLAM</li> <li>Nature of the Universe in Islam</li> <li>The Meaning And And Nature Of Sunnatullah</li> <li>Benefits of the Universe</li> <li>Islam and environmental insight</li> </ul>	
10	Students have the knowledge to apply morals in their profession and daily life (M4)	<ul> <li>MORAL ACTUALIZATION</li> <li>The Meaning of the Apostle's Struggle</li> <li>Actualization of the Apostle's Mission</li> <li>Application of Prophet's Attributes – in technology</li> <li>Worship and moral formation</li> </ul>	

-			1	1	1
	11	Students have the knowledge to apply the nature and foundation of science and technology in modern society (M4)	<ul> <li>science and technology</li> <li>The Nature of Knowledge in Islam</li> <li>Science and Technology Paradigm</li> </ul>		
			<ul> <li>Knowledge Resources</li> <li>Dhikr And Thought Pattern Application</li> </ul>		
	12	Students have the knowledge to apply	WORK ETHIC		
		the nature of work and work ethic	Internal Work Ethic, Islam		
		associated with the actualization of jihad	<ul> <li>Work Motivation in Islam</li> </ul>		
		in modern society (M4)	<ul> <li>Actualization of Jihad in Development</li> </ul>		
	13		Quiz 2		
	14	Students are able to provide responses to	ECONOMY		
		the concept of the meaning of Islamic	<ul><li>Definition, Principles and Ethics of</li></ul>		
		economics, principles and ethics then	Sharia Economics		
		analyze the management of zakat, waqf,	$\succ$ Empowerment of the people		
		infaq and alms and support the	through the Sharia Economy		
		implementation of Islamic economics in	Zakat. Waof, infag and alms		
		Indonesia (M5)			
-	15	Students are able to provide responses to	ISLAMIC COMMUNITY		
		the nature and meaning of family in	<ul> <li>Family Functions in Islam</li> </ul>		
		modern society and argue about the	> The Process of Establishing a		
		function and role of mosques in forming	Sakinah Family (Marriage)		
		a happy society (M5)	The mosque is the center of		
			civinzation		
	16	Students are able to provide responses to	ISLAMIC COMMUNITY		
		the nature and meaning of family in	<ul> <li>Family Functions in Islam</li> </ul>		
		modern society and argue about the	> The Process of Establishing a		
		function and role of mosques in forming	Sakinah Family (Marriage)		
		a happy society (M5)	The mosque is the center of		
			civilization		

17	UAS	
	100%	

IN NEGER	MALANG STATE	POLYTECHNIC				
July 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	STUDY PROGRA	M : D4 INFORMATICS ENGINE	ERING			
	STEDITROGRA	ASSESSN	IENT PLAN			
SUBJE	ISLAMIC EDUCA	TION				
CODE	RTI222001	WEIGHT (credits) / hour	2 credits/ 2 hours	SEMESTER	1	
SUPPORTING LECTURER	Ahmad Bahauddin					
FORMS OF TASKS						
Individual Tasks						
ASSESSMENT TITLE						
Task 1: Resumes of the Chapter	on Humans and Religi	on				
SUB COURSE LEARNING A	CHIEVEMENTS					
• Students are able to build the	e character that religion	n is a need and human nature				
DESCRIPTION						
Make a resume from the video lin	nk that I have shared, j	provided that:				
At least 2 pages and include your	r opinion about the ma	terial accompanied by clear and relia	able reference sources	•		
WORKING METHOD						
- Students view videos of	human and religious	naterial				
- Students make a resume	e from the material that	t has been presented				
OUTER FORMAT						
- The object of cultivation	n: the material core of	humans and religion				
- Outer Form: Resume						
INDICATORS, CRITERIA AF	ND WEIGHT ASSES	SMENI				
The accuracy	f the Ourles and Hedit	h				
I ne accuracy of the verses of the Quran and Hadith						
INIT LEWIENTATION SCHEDULE       Ind week						
https://www.youtube.com/watch	v=zRUC8xfxTOU					
REFERENCES						
Al Our'an Al Karim and Our'an A	Android, Fadloli, Sri N	urkudri, Abd. Chalim. 2018. Islamic	Religious Education	in Public Universities. Malan	ng: AM Publishing, Kemenristekdikti	
2016. Islamic Religious Education	on Module for Higher	Education. Jakarta: Director General	of Belmawa Kemenri	istekdikti, Samiun Jazuli. Ahz	zami. 2014. Life in the View of the Our'an.	
Jakarta: Human Echo, Abdullah,	M. Amin. 2012. Islam	ic Studies in Higher Education. Yog	yakarta Student Libra	ury		

$\land$	MALANG STATE POLYTECHNIC					
EXNIK NEGERIN	INFORMATION TECHNOLOGY DEPARTMENT					
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD					
SUBJE	ISLAMIC EDUCATION					
CODE	RTI222001     WEIGHT (credits) / hour     2 credits/ 2 hours     SEMESTER     1					
SUPPORTING LECTURER	Ahmad Bahauddin					
ASSESSMENT FORMS						
Quiz 1						
ASSESSMENT TITLE						
Quiz 1: 5 essay questions						
SUB COURSE LEARNING A	ACHIEVEMENTS					
Students are able to understand n	material 1-3					
DESCRIPTION						
Answer the quiz questions provid	ided					
WORKING METHOD						
Problems are done within 2 hours	irs of lessons					
OUTER FORMAT						
Student quiz answers						
INDICATORS, CRITERIA AN	ND WEIGHT ASSESSMENT					
Conformity of answers: 100%	: %					
The assessment weight for Assig	gnment 1 is 10% of 100% of the assessment for this course					
IMPLEMENTATION SCHED	DULE					
4th week	100 minutes					
OTHERS REQUIRED:						
REFERENCES						
Al Our'an Al Karim and Ou		dikti				
2016. Islamic Religious Ed	ducation Module for Higher Education, Jakarta: Director General of Belmawa Kemenristekdikti, Samiun Jazuli, Ahzami, 2014. Life in the View of the	ne				
Qur'an. Jakarta: Human Ecl	cho, Abdullah, M. Amin. 2012. Islamic Studies in Higher Education. Yogyakarta Student Library					

$\land$	MALANG STATE PO	LYTECHNIC					
EXNIK NEGERIA	<b>INFORMATION TEC</b>	INFORMATION TECHNOLOGY DEPARTMENT					
ALL	STUDY PROGRAM : D2 SITE SOFTWARE DEVELOPMENT						
	ASSESSMENT PLAN						
SUBJE	ISLAMIC EDUCATIO	<u>DN</u>					
CODE	RTI222001	WEIGHT (credits) / hour	2 credits/ 2 hours	SEMESTER	1		
SUPPORTING LECTURER	Ahmad Bahauddin						
FORMS OF TASKS							
Group Tasks							
ASSESSMENT TITLE							
Group 1 Task: The Concept of Ta	awhid						
SUB COURSE LEARNING AG	CHIEVEMENTS						
• Students are able to explain t	he concept of monotheisn	n as the basic principle of Muslim life	and explain the differ	rences in views of life between	monotheism and shirk		
DESCRIPTION							
Discuss the chapters that have be	en divided according to th	le RPS					
Write a paper with the conditions	:						
1. cover							
2. Introduction							
3. Formulation of the pr	oblem						
4. Fill							
5. Closing							
6. Bibliography							
Create PPT for presentation	ons						
WORKING METHOD							
1. Understand and discuss the ma	iterial provided per group.	<b></b>					
2. Prepare presentation materials	and papers according to t	he material.					
3. Conducting presentations and	discussions related to the	material.					
4. Each group that does not prese	nt writes down three ques	tions each as material for discussion.					
5. The lecturer provides validatio	n at the end of the present	ation.					
OUTER FORMAT							
- a. Worked Object: The c	concept of monotheism						
- b. Outer Form: PP1 and	term papers						
INDICATORS, CRITERIA AN	ND WEIGHT ASSESSM	ENT					
1. Accuracy of paper and PP	I components.						
2. Accuracy in presenting pro	esentation material.						
3. Ability to make presentation	ons communicative and in	iteresting.					
a. Assessment Weight: 5% o	t the overall assessment for	or this course.					
IMPLEMENTATION SCHED	ULE						

3rd week	1 week
OTHERS REQUIRED:	
Tasks are done in groups	
REFERENCES	
Al Qur'an Al Karim and Qur'an Android, Fadloli, Sri Nurkudri, Abd. Chalim. 2018. Islamic Reli	gious Education in Public Universities. Malang: AM Publishing, Kemenristekdikti.
2016. Islamic Religious Education Module for Higher Education. Jakarta: Director General of B	elmawa Kemenristekdikti, Samiun Jazuli. Ahzami. 2014. Life in the View of the Qur'an.
Jakarta: Human Echo, Abdullah, M. Amin. 2012. Islamic Studies in Higher Education. Yogyaka	rta Student Library

$\land$	MALANG STATE	POLYTECHNIC				
STANIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT					
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
ASSESSMENT METHOD						
SUBJE	ISLAMIC EDUCA	TION				
CODE	RTI222001	WEIGHT (credits) / hour	2 credits/ 2 hours	SEMESTER	1	
SUPPORTING LECTURER	Ahmad Bahauddin					
ASSESSMENT FORMS						
Quiz 2						
ASSESSMENT TITLE						
Quiz 2: Memorizing Letters relat	ed to handouts 10-12					
SUB COURSE LEARNING A	CHIEVEMENTS					
Students are able to understand n	naterial 10-12					
DESCRIPTION						
Make videos that contain memor	ization					
WORKING METHOD						
Memorizing videos						
OUTER FORMAT						
Tutorial video						
INDICATORS, CRITERIA AN	ND WEIGHT ASSES	SMENT				
Conformity of answers: 100%	: %					
The assessment weight for Assig	nment 2 is 10% of 100	)% of the assessment for this co	ourse			
IMPLEMENTATION SCHEDULE						
13th week	022		50 minutes			
OTHERS REQUIRED:						
REFERENCES						
Al Qur'an Al Karim and Ou	ır'an Android. Fadloli.	Sri Nurkudri, Abd. Chalim. 20	18. Islamic Religious Edu	cation in Public Universities.	Malang: AM Publishing, Kemenristekdikti.	
2016. Islamic Religious Ed	ucation Module for H	igher Education. Jakarta: Direct	tor General of Belmawa K	emenristekdikti, Samiun Jazul	i. Ahzami. 2014. Life in the View of the	
Our'an, Jakarta: Human Echo, Abdullah, M. Amin, 2012. Islamic Studies in Higher Education, Yogyakarta Student Library						

$\land$	MALANG STATE P	DLYTECHNIC			
WANIK NEGERIA	INFORMATION TE	CHNOLOGY DEPARTMENT			
ALL	STUDY PROGRAM	: D4 INFORMATICS ENGINEERI	ING		
		ASSESSMENT METH	HOD		
SUBJE	ISLAMIC EDUCATI	ON			
CODE	RTI222001	WEIGHT (credits) / hour	2 credits/ 2 hours	SEMESTER	1
SUPPORTING LECTURER	Ahmad Bahauddin				
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
UTS: 20 multiple choice questions					
SUB COURSE LEARNING ACHIEV	<b>EMENTS</b>				
Students are able to understand material	1-8				
DESCRIPTION					
Answer the UTS questions provided					
WORKING METHOD					
Problems are done within 2 hours of les	sons				
OUTER FORMAT					
UTS student answers					
<b>INDICATORS, CRITERIA AND WE</b>	LIGHT ASSESSMENT				
Conformity of answers: 100%	: %				
The UTS assessment weight is 20% of 1	00% of the assessment f	or this course			
IMPLEMENTATION SCHEDULE					
Oth week			100 minu	tas	
OTHEDS DECLIDED.			100 IIIIIu		
OTHERS REQUIRED.					
DEEEDENCES					
Al Our'on Al Karim and Our'an A	ndroid Fadlali Sri Nurk	udri Abd Chalim 2018 Islamic Pali	gious Education in Public I	Iniversities Malang: AM Publishin	
2016 Islamic Religious Education	Module for Higher Edu	cation Jakarta: Director General of B	elmawa Kemenristekdikti (	Samiun Jazuli Ahzami 2014 Life	g, Kullen Sickulkii.
Our'an Jakarta: Human Echo Ab	fullah M Amin 2012 I	slamic Studies in Higher Education V	ogyakarta Student Library	Jannun Jazun. Anzann. 2014. Life	
Yai ali, Jakarta, Hullan Dello, Ab	1411an, 191. Annin 2012. I	sianne staules in righer Ludeation. I	Syakaria Student Library		

ANIK NEGERIA	MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT					
	<b>STUDY PROGRAM : D4</b>	INFORMATICS ENGINEERING				
		ASSESSMENT METHOD				
SUBJE	ISLAMIC EDUCATION					
CODE	RTI222001	WEIGHT (credits) / hour	2 credits/ 2 hours	SEMESTER	1	
SUPPORTING LECTURER	Ahmad Bahauddin					
ASSESSMENT FORMS						
UAS						
ASSESSMENT TITLE						
UAS: making an interview report						
SUB COURSE LEARNING ACHIEVEMEN	NTS					
Students are able to understand material 1-16						
DESCRIPTION						
Preparation of interview reports and connected	with the arguments of the Qui	r'an and Hadith				
WORKING METHOD						
Problems are done within 1 week						
OUTER FORMAT						
Student report						
INDICATORS, CRITERIA AND WEIGHT	ASSESSMENT					
Conformity of answers: 100% :	%					
The UTS assessment weight is 30% of 100% o	f the assessment for this cours	e				
IMPLEMENTATION SCHEDULE						
17th week			100 minu	tes		
OTHERS REQUIRED:						
REFERENCES						
Al Qur'an Al Karim and Qur'an Android,	Fadloli, Sri Nurkudri, Abd. C	halim. 2018. Islamic Religious Education	n in Public Universities. N	Malang: AM Publishing, Kemenri	stekdikti.	
2016. Islamic Religious Education Modu	le for Higher Education. Jakar	ta: Director General of Belmawa Kemeni	ristekdikti, Samiun Jazul	i. Ahzami. 2014. Life in the View	of the	
Qur'an. Jakarta: Human Echo, Abdullah,	M. Amin. 2012. Islamic Studi	es in Higher Education. Yogyakarta Stud	ent Library			

#### ASSESSMENT PLAN AND COURSE EVALUATION

## ENGLISH 2

Week	Sub-CP-MK	Subject	Assessment form	Weight
1-3	<ul> <li>Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>Programming</i></li> </ul>	<ul> <li>Topic 1: Programming</li> <li>Stages in Programming</li> <li>Flowcharting</li> <li>ProgrammingLanguage.</li> <li>Grammar Study : Describing objects and their functions, Describing Process, and Reporting Screen Messages</li> </ul>	<ul> <li>Task 1: Flowchart regarding daily activities</li> <li>Quiz 1 (5 questions)</li> <li>UTS (6 questions)</li> <li>UAS (2 questions)</li> </ul>	Task 1: 2.5% Task 2: 2.5% Task 3: 2.5% Task 4: 2.5% Task 5: 2.5% Task 6: 2.5% Quiz 1: 10% UTS: 25%
4-6	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic <i>Database</i> .	<ul> <li>Topic 2: Databases</li> <li>Database Basics</li> <li>Grammar Study: Expressing Certainty, Using If-Clause</li> <li>Data Processing</li> <li>Data Storage and Backup</li> </ul>	<ul> <li>Quiz 1 (8 questions)</li> <li>UTS (7 questions)</li> <li>UAS (3 questions)</li> </ul>	
7-8	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic <i>Computer Security</i> .	<ul> <li>Topic 3: Computer Security</li> <li>Computer Threats</li> <li>Grammar Study: Simple Past Tense.</li> <li>Computer Crimes</li> <li>Grammar Study: Analyzing Problems and Their Solutions, and Writing Short Reports</li> </ul>	<ul> <li>Task 2: Compile news articles about <i>Computer Crime</i> in Indonesia.</li> <li>UTS (8 questions)</li> <li>UAS (4 questions)</li> </ul>	
9		UTS		
10-11	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>Electronic Publishing</i> .	<ul> <li>Topic 4: Electronic Publishing</li> <li>Electronic Publishing</li> <li>Grammar Study: Expressing Agreement/Disagreement, The Infinitives</li> </ul>	<ul> <li>Task 3: Make a display design for <i>an Electronic Book Reader</i> with an English display .</li> <li>Quiz 2 (5 questions)</li> <li>UAS (3 questions)</li> </ul>	Task 7: 2.5% Task 8: 2.5% Task 9: 2.5% Task 10: 2.5% Assignment 11: 2.5% Task 12: 2.5%
12-14	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic of <i>E-commerce</i>	<ul> <li>Topic 5: E-Commerce</li> <li>E-commerce Types</li> <li>E-commerce Features</li> <li>Grammar Study: Adverbs of Quantities, Linking Words</li> </ul>	<ul> <li>Task 4: Make an analysis of the appearance of an <i>e</i>- <i>commerce/online shop</i> <i>website</i></li> <li>Quiz 2 (5 questions)</li> </ul>	Quiz 2: 10% UAS: 25%

15-16	• Mastering and applying oral and written communication techniques using English in the context of Informatics Engineering with the topic <i>Recent Development in IT</i>	<ul> <li>Topic 6: Recent Developments on Information Technology</li> <li>Current Changes in Interactions</li> <li>Recent Developments in Computing</li> <li>Grammar Study: Future Tense, Making a Summary of an Article</li> <li>UAS</li> </ul>	<ul> <li>Task 5: Prepare a journal article summary</li> <li>Quiz 2 (5 questions)</li> <li>UAS (4 questions)</li> </ul>	
		<ul> <li>Online Transactions</li> <li>Transaction Security</li> </ul>	• UAS (4 questions)	

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EXNIK NEGERI 4	INFORMATION TECHNOLOGY DEPARTMENT				
and the second s	STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
	-	ASSES	SMENT METHOD		
SUBJE	English 2				
CODE	RTI212003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	2
SUPPORTING LECTURER	Faiz Ushbah Mubar	ok, S.Pd, M.Pd.			
ASSESSMENT FORMS					
QUIZ 1					
ASSESSMENT TITLE					
Quiz material 1 - 3					
SUB COURSE LEARNING A	CHIEVEMENTS				
Able to answer questions about the	he material from topic	es 1 - 3.			
DESCRIPTION					
Solve individual questions on the	e topic of Programmin	g, Database and Computer Sec	curity.		
WORKING METHOD					
1. Answer all questions from	om online quiz questic	ons			
OUTER FORMAT	1 1				
A. Job Object: Quiz					
B. Outcome: Student answ	ers on online quizzes				
<b>INDICATORS, CRITERIA AN</b>	ND WEIGHT ASSES	SSMENT			
Conformity of Answers	: 100%				
Quiz 1 assessment weight is 20%	of 100% assessment	of this course			
<b>IMPLEMENTATION SCHED</b>	ULE				
Week 9			1 week		
<b>OTHERS REQUIRED:</b>					
REFERENCES					
1. Asri, Atiqah Nurul. 201	8. English for Informa	<i>ttics 2</i> : Seventh Edition. The m	odule has not been publishe	ed yet.	
2. Glendinning, Eric H and	d McEwan, John. (201	2). Basic English for Computin	g Revised and Updated . O	xford: Oxford University Pres	SS.
3. Hills, David. (2012). En	glish for Information	Technology Vocational English	a Course Book 2 . Essex:		
Pearson Education Limi	ted.				
4. Esteras, Santiago Rema	cha. (2010). Infotech I	English for Computer Users Wo	orkbook . Cambridge: Camb	oridge University Press.	
5. Esteras, Santiago Rema	cha. (2011). Infotech I	English for Computer Users Stu	dent's Book . Cambridge: C	Cambridge University Press.	
6. Fabre, Elena Marco, and	l Esteras, Santiago Re	macha. (2007). Professional En	glish in Use: ICT. Cambrid	lge: Cambridge University	
press.					
7. Olejniczak, Maja. (2011	). English for Informa	tion Technology 1 Vocational 1	English Course Book . Esse	x: Pearson Education Limited	l

IK NEGER	MALANG STATE	POLYTECHNIC				
Sterning The second	STUDV PROGRAM	TUDV PROCRAM · D4 INFORMATICS FNCINFFRINC				
	STUDITROORAL	ASSES	SMENT METHOD			
SUBJE	English 2	110010				
CODE	RTI212003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	2	
SUPPORTING LECTURER	Faiz Ushbah Mubaro	ok, S.Pd, M.Pd.				
ASSESSMENT FORMS						
QUIZ 2						
ASSESSMENT TITLE						
Quiz material 4-6						
SUB COURSE LEARNING AG	CHIEVEMENTS					
Able to answer questions about the	he material from topic	s 4 - 6.				
DESCRIPTION						
Complete individual questions or	n the topic of E-Comm	erce, Electronic Publishing and	d Recent Development on I	Г		
WORKING METHOD						
2. Answer all questions fro	om online quiz question	ns				
OUTER FORMAT						
C. Job Object: Quiz	1					
D. Outcome: Student answ	ers on online quizzes	OMENT				
INDICATORS, CRITERIA AN	ND WEIGHT ASSES	SMENI				
Conformity of Answers	: 100%					
Quiz 2 assessment weight is 25%	of 100% assessment	of this course				
<b>IMPLEMENTATION SCHED</b>	ULE					
Week 16			1 week			
<b>OTHERS REQUIRED:</b>						
REFERENCES						
1. Asri, Atiqah Nurul. 201	8. English for Informa	tics 2 : Seventh Edition. The m	odule has not been publishe	ed yet.		
2. Glendinning, Eric H and	l McEwan, John. (201	2). Basic English for Computin	g Revised and Updated . Or	xford: Oxford University Pres	SS.	
3. Hills, David. (2012). <i>En</i>	glish for Information	Technology Vocational English	Course Book 2 . Essex:			
Pearson Education Limi	Pearson Education Limited.					
4. Esteras, Santiago Remac	4. Esteras, Santiago Remacha. (2010). Infotech English for Computer Users Workbook. Cambridge: Cambridge University Press.					
5. Esteras, Santiago Remac	na. (2011). Injotech E	ngusn jor Computer Users Stur	alish in User ICT. Combridge: C	amoriage University Press.		
o. rabre, Elena Marco, and	i Esteras, santiago Rei	nacha. (2007). Professional En	giisii ili Use: ICI. Cambrid	ge. Camoriage University		
7. Olejniczak, Maja. (2011	). English for Informa	tion Technology 1 Vocational 1	English Course Book . Essex	x: Pearson Education Limited		

### ASSESSMENT AND EVALUATION PLAN

### Algorithm and Data Structure Practicum

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	• Able to apply basic programming concepts (selection, looping, arrays, functions) by creating programs using the Java programming language	<ul><li>Election</li><li>loop</li><li>Arrays</li><li>Function</li></ul>	• Task 1: Jobsheet 1	Task 1: 2.5% Task 2: 2.5% Task 3: 2.5% Task 4: 2.5%
2	<ul> <li>Able to create classes with the Java programming language</li> <li>Able to implement object creation</li> </ul>	<ul> <li>Compile data object in Java language</li> <li>Adding attributes to data objects</li> <li>Adding methods to data objects</li> <li>Applying data objects in case studies.</li> </ul>	<ul> <li>Task 2: Jobsheet 2</li> <li>Quiz 1 (1 question)</li> <li>UTS (1 question)</li> <li>UAS (2 questions)</li> </ul>	Task 5: 2.5% Task 6: 2.5% Quiz 1: 10% UTS: 25%
3	<ul> <li>Students are able to make logic about arrays of objects in Java</li> <li>Students are able to apply the creation of an array of objects</li> </ul>	<ul> <li>Declare and instantiate Arrays in Java</li> <li>Declare and instantiate the Java language Array of object variables</li> <li>Make an assignment Array of objects</li> <li>Displays an Array of objects</li> </ul>	<ul> <li>Task 3: Jobsheet 3</li> <li>Quiz 1 (1 question)</li> <li>UTS (1 question)</li> <li>UAS (2 questions)</li> </ul>	
4		Quiz 1	1	1
5	<ul> <li>brute force and divide -conquer algorithms</li> <li>Students are able to apply the use of algorithms brute force and divide-conquer</li> </ul>	<ul> <li>Definition of Algorithm Brute Force</li> <li>Divide-conquer algorithm</li> <li>Big(O) Complexity Algorithm</li> <li>How to calculate Big(O) notation</li> </ul>	<ul> <li>Task 4: Jobsheet 4</li> <li>UTS (1 question)</li> <li>UAS (42 questions)</li> </ul>	
6	<ul> <li>Students are able to make algorithms for searching bubble sort, selection sort and insertion sort</li> <li>Students are able to apply algorithms of searching bubble sort, selection sort and insertion sort in the program</li> </ul>	<ul> <li>Definition of Sorting</li> <li>Bubble Sort Algorithm</li> <li>Selection Sort Algorithm</li> <li>Insertion Sort Algorithm</li> </ul>	<ul> <li>Task 5: Jobsheet 5</li> <li>UTS (1 question)</li> <li>UAS (1 question)</li> </ul>	
7	<ul> <li>Students are able to create search algorithms with sequential search and binary search</li> <li>Students are able to apply sequential search and binary search algorithms in the program</li> </ul>	<ul> <li>Definition of search</li> <li>Sequential search/linear search algorithm</li> <li>Binary search algorithm</li> <li>Merge sort algorithm</li> </ul>	<ul> <li>Task 6: Jobsheet 6</li> <li>UTS (1 question)</li> <li>UAS (1 question)</li> </ul>	
8	• Students are able to apply enrichment material about the merge sort algorithm in the program	UTS		
----	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------
9	<ul> <li>Students are able to create a Stack data structure</li> <li>Students are able to apply the stack algorithm in the program</li> </ul>	<ul> <li>Definition of Stacks</li> <li>Operations on the Stack</li> <li>push operation</li> <li>pop operation</li> <li>Convert Infix Arithmetic Equations to Postfix using Stack</li> </ul>	<ul> <li>Task 7: Jobsheet 7</li> <li>Quiz 1 (1 question)</li> <li>UAS (1 question)</li> </ul>	Task 7: 2.5% Task 8: 2.5% Task 9: 2.5% Task 10: 2.5% Assignment 11: 2.5% Task 12: 2.5%
10	<ul> <li>Students are able to create Queue data structures</li> <li>Students are able to apply the queue algorithm in the program</li> </ul>	<ul> <li>Understanding Queue Data Structures</li> <li>enqueuing operation</li> <li>dequeue operation</li> </ul>	<ul> <li>Task 8: Jobsheet 8</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	UAS: 25%
11	<ul> <li>Students are able to create a linked list data structure</li> <li>Students create linked lists in the program</li> <li>Students are able to distinguish what problems can be solved using a linked list</li> </ul>	<ul> <li>Linked List data structure</li> <li>Operation add Single Linked List</li> <li>Operation remove Single Linked List</li> <li>Get Single Linked List operation</li> <li>Single Linked List print operation</li> </ul>	<ul> <li>Task 9: Jobsheet 9</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	
12	<ul> <li>Students are able to create a double linked list data structure</li> <li>Students are able to apply double linked lists to the program</li> </ul>	<ul> <li>Understanding the Double Linked List data structure</li> <li>Operation add Double Linked List</li> <li>Operation remove Double Linked List</li> <li>Operation get Double Linked List</li> <li>Double Linked List print operation</li> </ul>	<ul> <li>Task 10: Jobsheet 10</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	
13		Quiz 2	·	
	<ul> <li>Students are able to make tree algorithms in general</li> <li>Students are able to apply binary trees to programs</li> <li>Students are able to create a Binary Search Tree algorithm</li> <li>Students are able to apply Binary Search Tree to the program</li> </ul>	<ul> <li>Definition of Trees</li> <li>Definition of Binary Trees</li> <li>Definition of Binary Search Tree</li> <li>Binary Search Tree insert operation</li> <li>Binary Search Tree delete operation</li> </ul>	<ul> <li>Task 11: Jobsheet 11</li> <li>UAS (1 question)</li> </ul>	

15	<ul> <li>Students are able to make Graph algorithms in General</li> <li>Students are able to apply the Graph</li> </ul>	<ul> <li>Definition of Graphs</li> <li>Graph implementation in linked list</li> <li>Graph implementation in arrays</li> </ul>	<ul><li>Task 12: Jobsheet 12</li><li>UAS (1 question)</li></ul>	
	algorithm to the program	• Graph implementation in arrays		
16	Students are able to create java programs according to case studies using Collections in the Java library	Best Practice Collection	• UAS (1 question)	
17		UAS		
TOTAL WEIGHT			100%	

	MALANG STATE POLY	<b>FECHNIC</b>				
	INFORMATION TECHN	INFORMATION TECHNOLOGY DEPARTMENT				
Transferration of the Generation of the Generati	STUDY PROGRAM : D4	INFORMATICS ENGINEERING				
		ASSESSMENT METHOD				
SUBJECT	Algorithm and Data Structur	e Practicum				
CODE	RTI212009	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER 2		
SUPPORTING LECTURER	1. Maybe Astiningrum, S	T., M.Kom.				
	2. Imam Fahrur Rozi, ST.	, MT				
	3. Mustika Mentari, S.Ko	m., M.Kom				
	4. Mamluatul Hani'ah, S.I	Kom., M.Kom.				
	5. Rokhimatul Wakhidah,	S.Pd., MT				
	6. Noprianto SKom., ME	ng.				
	7. Septian Enggar Sukma	na, S.Pd., MT				
ASSESSMENT FORMS						
Task						
ASSESSMENT TITLE						
Jobsheets and Assignments						
SUB COURSE LEARNING ACHIEV	EMENTS		1 T' 1 1T' D 11 T'			
Mastering the concept of Object, Array of Object, Bruteforce, Divide-Conquer, Searching, Sorting, Queue, Stack, Single Linked List, Double Linked List, Tree, Graph.						
DESCRIPTION						
WORKING METHOD	1 of practicum steps and assign	iments				
1 Do the practicum according to the	stens on the jobsheet					
2 Answer the questions at the end of	the practicum					
3 do the work at the end of the works	sheet					
4. Make reports on the results of work	4 Make reports on the results of worksheets and assignments					
5. Assignments are done independently and collected in softcopy form via e-learning lmsslc.polinema.ac.id						
OUTER FORMAT	OUTER FORMAT					
Work Object: Jobsheet practicum and as	Work Object: Jobsheet practicum and assignments					
Output Form: a report containing the results of practicum and assignments in PDF format on A4 paper size. The student's name, NIM, and class are written at the top left. Systematic file						
name is Assignment X_Class_Name of Student						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						

 Report format structure : 10%

 Conformity of answers : 9 0 %

 Assignment assessment weight is 30 % of 100% assessment of this course

 IMPLEMENTATION SCHEDULE

 Week 1 -3, 4-7, 9-12, 14-16

 0

 INPRERENCES

 1. Goodrich, MT, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java 6th Edition. Wiley Global Education

 2. Ramadhani, C. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: Andi Publisher

 3. Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher

 4. Hariyanto, B. 2007. Data Structure. Bandung: Informatics

 5. Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher

6. Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Publisher

STERMUK NEGER, 4

ASSESSMENT METHOD					
SUBJECT	Algorithm and Data Str	ructure Practicum			
CODE	RTI212009	WEIGHT (credits) / hour	2 credits / 4	SEMESTER	2
			hours		
SUPPORTING	Maybe Astiningrum, S'	T., M.Kom.			
LECTURER	Imam Fahrur Rozi, ST.	., MT			
	Mustika Mentari, S.Ko	m., M.Kom			
	Mamluatul Hani'ah, S.I	Kom., M.Kom.			
	Rokhimatul Wakhidah,	, S.Pd., MT			
	Noprianto SKom., ME	ng.			
	Septian Enggar Sukma	na, S.Pd., MT			
ASSESSMENT FORM	4S				
Quiz 1					
ASSESSMENT TITLI	E				
Quiz material 1-3					
SUB COURSE LEAR	NING ACHIEVEMEN	TS			
Students are able to imp	olement basic programmi	ng concepts in Java programs			
Students are able to imp	plement the stages of crea	ting classes and objects in Java progr	rams		
Students are able to imp	plement arrays of objects	in Java programs			
DESCRIPTION					
Create programs by util	izing the basic concepts of	of programming, class, object, array o	of objects, Brute	Force, and Divide-Conq	uer using the Java programming language
WORKING METHO	D				
1. The questions are	1. The questions are done through e-learning lmsslc .polinema.ac.id				
2. Quiz done within	2. Quiz done within 10 0 minutes				
OUTER FORMAT					
A. Job Object: Quiz					
B. Outcome Form: student Quiz answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
Quiz I assessment weig	nt is 10 % of 100% asses	ssment of this course			

IMPLEMENTATION SCHEDULE	
4th week	60 minutes
OTHERS REQUIRED:	
REFERENCES	
Goodrich, MT, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java	a 6th Edition. Wiley Global Education
Ramadhani, C. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: A	Andi Publisher
Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publ	isher
Hariyanto, B. 2007. Data Structure. Bandung: Informatics	
Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher	
Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Pul	blisher

STERMUK NEGER, 4

ASSESSMENT METHOD						
SUBJECT	Algorithm and Data Str	ructure Practicum				
CODE	RTI212009	WEIGHT (credits) / hour	2 credits / 4	SEMESTER	2	
			hours			
SUPPORTING	Maybe Astiningrum, S'	Г., М.Kom.				
LECTURER	Imam Fahrur Rozi, ST.	, MT				
	Mustika Mentari, S.Ko	m., M.Kom				
	Mamluatul Hani'ah, S.I	Kom., M.Kom.				
	Rokhimatul Wakhidah,	S.Pd., MT				
	Noprianto SKom., ME	ng.				
	Septian Enggar Sukma	na, S.Pd., MT				
ASSESSMENT FORM	15					
Quiz 2						
ASSESSMENT TITLI	E					
Quiz material 9-12						
SUB COURSE LEARNING ACHIEVEMENTS						
Students are able to implement the concepts of Stack, Queue, Linked List and Double Linked List in Java programs						
Students are able to imp	Students are able to implement the Stack, Queue, Linked List and Double Linked List stages in Java programs					
Students are able to implement Stack, Queue, Linked List and Double Linked List in Java programs						
DESCRIPTION	1 т ' 1		· 1 0 I'	1 11' / 1D 11 1'	1 17',	
Create programs using t	he Java programming lai	iguage by utilizing the concepts of Si	tack, Queue, Lin	ked List and Double Lin	ked List	
WORKING METHO	<b>)</b> 	an lucale a lineare estid				
1. The questions a	1. The questions are done through e-learning imssic.polinema.ac.id					
2. Quiz done in 100 minutes						
A Job Object: Ou	A Jah Object Oviz					
B Outcome Form	: student Ouiz answers					
INDICATORS CRITERIA AND WEICHT ASSESSMENT						
Conformity of answers	Conformity of answers : 100%					
Quiz 2 assessment weig	ht is 10% of 100% asses	sment of this course				

IMPLEMENTATION SCHEDULE				
13th week	60 minutes			
OTHERS REQUIRED:				
REFERENCES				
Goodrich, MT, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java 6th Edition. Wiley Global Education				
Ramadhani, C. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: Andi Publisher				
Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher				
Hariyanto, B. 2007. Data Structure. Bandung: Informatics				
Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher				
Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Publisher				

Stewnik NEGERI AP

		ASSE	SSMENT MET	HOD		
SUBJECT	Algorithm and Data Str	ructure Practicum				
CODE	RTI212009	WEIGHT (credits) / hour	2 credits / 4	SEMESTER	2	
			hours			
SUPPORTING	Maybe Astiningrum, S	T., M.Kom.				
LECTURER	Imam Fahrur Rozi, ST.	, MT				
	Mustika Mentari, S.Kor	m., M.Kom				
	Mamluatul Hani'ah, S.K	Kom., M.Kom.				
	Rokhimatul Wakhidah,	S.Pd., MT				
	Noprianto SKom., MEr	ng.				
	Septian Enggar Sukmar	na, S.Pd., MT				
ASSESSMENT FORM	IS					
Practical work						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEAR	SUB COURSE LEARNING ACHIEVEMENTS					
Students are able to imp	lement meeting material	1 - 7 in the Java program				
DESCRIPTION						
Create programs using t	he Java programming lar	nguage by utilizing the concepts of C	Object, Array of	Objects, Brute Force, D	uvide-Conquer, Searching, Sorting.	
WORKING METHOD						
The questions are done	through e-learning lmsslo	c.polinema.ac.id				
The questions were don	e in 120 minutes					
Work Object UTS						
WORK ODJECI: UTS	Word					
INDICATORS CRITI	FRIA AND WEIGHT A	SSFSSMENT				
Conformity of answers	• 100%					
Conformity of answers . 100 %						
The UTS assessment we	eight is 25% of 100% of t	the assessment for this course				
IMPLEMENTATION	SCHEDULE					
8th week			120 n	ninutes		

# **OTHERS REQUIRED:**

#### REFERENCES

Goodrich, MT, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java 6th Edition. Wiley Global Education

Ramadhani, C. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: Andi Publisher

Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher

Hariyanto, B. 2007. Data Structure. Bandung: Informatics

Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Publisher

STERNIK REGERIA
i S i S

ASSESSMENT METHOD					
SUBJECT	Algorithm and Data Str	ructure Practicum			
CODE	RTI212009	WEIGHT (credits) / hour	2 credits / 3	SEMESTER	2
			hours		
SUPPORTING	Maybe Astiningrum, S	T., M.Kom.			
LECTURER	Imam Fahrur Rozi, ST.	, MT			
	Mustika Mentari, S.Kor	m., M.Kom			
	Mamluatul Hani'ah, S.K	Kom., M.Kom.			
	Rokhimatul Wakhidah,	, S.Pd., MT			
	Noprianto SKom., MEr	ng.			
	Septian Enggar Sukmar	na, S.Pd., MT			
ASSESSMENT FORM	18				
Practical work					
ASSESSMENT TITLI	E				
UAS					
SUB COURSE LEARNING ACHIEVEMENTS					
Students are able to implement meeting material 1 - 16 in the Java program					
DESCRIPTION					
Create programs using the Java programming language by utilizing the concepts of Algorithms and Data Structures according to the given case studies					to the given case studies
WORKING METHOD					
The questions are done through e-learning lmsslc.polinema.ac.id					
The questions were don	e in 120 minutes				
OUTER FORMAT					
Work Object: UAS	Work Object: UAS				
Outer Form: student answers					
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT					
Conformity of answers : 100%					
The UAS assessment weight is 25% of 100% of the assessment for this course					
IMPLEMENTATION	SCHEDULE				
17th week			120 m	inutes	

# **OTHERS REQUIRED:**

#### REFERENCES

Goodrich, MT, Tamassia, R., & Goldwasser, MH 2014. Data Structures & Algorithms in Java 6th Edition. Wiley Global Education

Ramadhani, C. 2015. Basic Algorithm and Data Structure with Java Language. Yogyakarta: Andi Publisher

Nugroho, A. 2008. Algorithms and Data Structures in Java Language. Yogyakarta: Andi Publisher

Hariyanto, B. 2007. Data Structure. Bandung: Informatics

Buana, IS, Nata, GN M, & Arnawa, IK 2018. Data Structure. Yogyakarta: Andi Publisher Kadir, A. Theory and Application of Data Structures Using Java. 2015. Yogyakarta: Andi Publisher

#### ASSESSMENT AND EVALUATION PLAN

#### COMMUNICATION AND ORGANIZATIONAL SCIENCES

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ol> <li>Students are able to recognize the final goal of the course</li> <li>Students are able to explain the definition of communication</li> <li>Students are able to understand the concept of effective communication in information systems project organizations</li> </ol>	<ol> <li>The ultimate goal of lectures</li> <li>Definition of communication</li> <li>Effective communication concept</li> </ol>		Quiz 1 : 10% Quiz 2 : 10% UTS : 20% UAS : 20% Task 1 : 10% Task 2 : 10% Task 3 : 10% Task 4 : 10%
2	Students are able to explain how to become a good listener	Good listening technique		
3	Students Able to Master the techniques of being a good speaker and their implementation	<ol> <li>Good speaker technique</li> <li>Communication constraints</li> <li>Practice communicating to be a good speaker in front of discussion forums</li> </ol>		
4	Quiz 1		1	
5	Students are able to explain the definition of leadership and leadership styles/typologies	<ul> <li>Leadership definition</li> <li>Leadership style/typology</li> </ul>		
6	Students are able to explain and describe the criteria for a leader in the industrial era 4.0 (technology and information era)	Leadership needed in the era of the industrial revolution 4.0 (technology and information era)		
7	Students are able to master and understand the theory of organization	<ol> <li>organization theory</li> <li>Articles of Association</li> <li>Chairman</li> <li>Organizational structure</li> </ol>		
8	UTS			1

17		UAS TOTAL WEIGHT	1000/
1.	moderation and minutes	2)Minutes	
16	Students are able to master the concept of	1)Moderation	
	Applying good presentation techniques in an information system project in a discussion forum		
	system project	forum	
	presentation techniques in an information	information system project in a discussion	
15	Students are able to master good	- Good presentation technique in an	
		4)Negotiation steps	
	hogotaaning	3)Negotiation characteristics	
14	negotiating	2)Negotiation approach	
13	Students are able to master techniques in	QUIZ 2	
12		organization	
	communication methods in organizations	communication methods within an	
12	Students are able to understand effective	1)The practice of implementing effective	
	in an organization	information systems project organization	
11	Students are able to implement leadership	1)The practice of running a team within an	
		culture and communication	
	,	4)The process of forming organizational	
	(organizational behavior and culture)	3)Type/type of organizational culture	
10	for running a team in an organization	2)Functions/roles of organizational culture	
10	Students are able to master the procedures	1)Definition of organizational culture	
	responsibility in an organization	3) Responsibility in organization	
9	definition of authority nower and	2) Dower	

$\land$	MALANG STATE P	OLYTECHNIC			
INFORMATION TECHNOLOGY DEPARTMENT					
(i)	STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
	1	ASSESSMENT METHOD			
SUBJE	Communication and C	Organizational Science			
CODE	RTI212010	WEIGHT (credits) / hour	2 credits/ 4 hours	SEMESTER	1
SUPPORTING LECTURER	M. Unggul Pamenang,	, S.ST., MT			
ASSESSMENT FORMS					
Quiz 1					
ASSESSMENT TITLE					
Evaluation Quiz chapters 1-3					
SUB COURSE LEARNING ACHIEVEMEN	TS				
Students are able to understand chapters 1-3					
DESCRIPTION					
Independent task of compiling an essay					
WORKING METHOD					
offline					
OUTER FORMAT					
Student essay answers					
INDICATORS, CRITERIA AND WEIGHT	ASSESSMENT				
(indicator) :	100 %				
The score for Quiz 1 is 10% of 100% for this co	ourse				
IMPLEMENTATION SCHEDULE			I		
4th week			4 hours		
OTHERS REQUIRED:					
REFERENCES					
1) Siti Romlah, 2018, Communication and Organizational Studies, Polynema Teaching Module, Malang					
Supporters:		=			
1) Romlah, Siti, and Deddy Kusbianto, 20	)12, Organization and Le	eadership, Teaching Module, Polynema, I	Malang		
2) Deddy KPA, Communication Studies in Organizations, Polynema, 2007					
3) Gari Yukl, 2007, Leadership in Organi	zations, Prentice Hall				
4) Muchlas, Makmuri, 2005, Organization	nal Behavior, 1st Edition	n, Gajah University Press, Yogyakarta		11.1	
5) Louis Carter, David Ulrich, and Marsh	all Goldsmith, 2004, Bes	st Practices in Leadership Development a	nd Organizational Change, Pfeiffer	Wiley.	

MALANG STATE POLYTECHNIC INFORMATION TECHNOLOGY DEPARTMENT				
STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
	ASSESSMENT METHOD			
SUBJE	Communication and Organizational Science			
CODE	RTI212010WEIGHT (credits) / hour2 credits/ 4 hoursSEMESTER1			
SUPPORTING LECTURER	M. Unggul Pamenang, S.ST., MT			
ASSESSMENT FORMS				
Quiz 2				
ASSESSMENT TITLE				
Quiz Evaluation of material 9-12				
SUB COURSE LEARNING AG	CHIEVEMENTS			
Students are able to understand c	napter material 9-12			
DESCRIPTION				
Independent task of compiling the	e Organizational Structure and job descriptions			
WORKING METHOD				
Offline				
OUTER FORMAT				
Reports on the organizational stru	icture and job descriptions			
INDICATORS, CRITERIA AN	ID WEIGHT ASSESSMENT			
(indicator) : 100%				
Quiz 2 assessment weight is 10%	of 100% assessment of this course			
IMPLEMENTATION SCHED	ULE			
13th week	4 hours			
OTHERS REQUIRED:				
REFERENCES				
1) Siti Romlah, 2018, Communication and Organizational Studies, Polynema Teaching Module, Malang				
Supporters:				
1) Romlah, Siti, and Deddy Kusbianto, 2012, Organization and Leadership, Teaching Module, Polynema, Malang				
2) Deddy KPA, Communication Studies in Organizations, Polynema, 2007				
3) Gari Yukl, 2007, Leader	ship in Organizations, Prentice Hall			
4) Muchlas, Makmuri, 200	5, Organizational Behavior, 1st Edition, Gajah University Press, Yogyakarta			
5) Louis Carter, David Ulr	ch, and Marshall Goldsmith, 2004, Best Practices in Leadership Development and Organizational Change, Pfeiffer Wiley.			

	MALANG STATE POLYTECHNIC				
WHIK NEGERIA	INFORMATION TECHNOLOGY DEPARTMENT				
STUDY PROGRAM : D4 INFORMATICS ENGINEERING					
	ASSESSMENT METHOD				
SUBJE	Communication and Organizational Science				
CODE	RTI212010 WEIGHT (credits) / hour 2 credits/ 4 hours SEMESTER 1				
SUPPORTING LECTURER	M. Unggul Pamenang, S.ST., MT				
ASSESSMENT FORMS					
UTS					
ASSESSMENT TITLE					
Evaluation of material 1-7					
SUB COURSE LEARNING A	CHIEVEMENTS				
Students are able to understand the	e material in chapters 1-7				
DESCRIPTION					
Make a video about meeting sime	ilations, in which there are leaders and members				
WORKING METHOD					
Group					
OUTER FORMAT					
Tutorial video					
INDICATORS, CRITERIA AN	ID WEIGHT ASSESSMENT				
(indicator)	(indicator) : 100%				
The UTS assessment weight is 20	100% of the assessment for this course				
IMPLEMENTATION SCHED	ULE				
13th week	4 hours				
OTHERS REQUIRED:					
REFERENCES					
2) Siti Romlah, 2018, Communication and Organizational Studies, Polynema Teaching Module, Malang					
Supporters:					
6) Romlah, Siti, and Deddy	6) Romlah, Siti, and Deddy Kusbianto, 2012, Organization and Leadership, Teaching Module, Polynema, Malang				
7) Deddy KPA, Communication Studies in Organizations, Polynema, 2007					
$\delta$ Gari Yuki, 2007, Leader	snip in Organizations, Prentice Hall 6. Organizational Debasian Let Edition. Origh University Desce. Versulants				
(9) Muchlas, Makmuri, 200 (10) Lawis $C$ ( $L$ D $\sim$ 111	o, Organizational Benavior, 1st Edition, Gajah University Press, Yogyakarta				
10) Louis Carter, David Ulr	cn, and Marshall Goldsmun, 2004, Best Practices in Leadership Development and Organizational Change, Pieiner Wiley.				

UNEGE NOT	MALANG STATE	E POLYTECHNIC			
July and the state	INFORMATION TECHNOLOGY DEPARTMENT				
	STUDY PROGRAM : D4 INFORMATICS ENGINEERING				
SUDIE			SESSMENT METHOD		
SUBJECT	DTI212010	d Organizational Science	2 anodite/ 1 hours	SEMESTED	1
SUPPORTING LECTURER	M Unggul Pamena	wEIGHT (credits) / nour	2 creans/ 4 nours	SENIESTER	1
ASSESSMENT FORMS		ling, 5.51., W11			
UAS					
ASSESSMENT TITLE					
Final evaluation of material 1-16	)				
SUB COURSE LEARNING A	CHIEVEMENTS				
Students are able to understand t	he material in chapter	rs 1-16			
DESCRIPTION					
Working on UAS Questions					
1. What are the benefits of	f communication for y	you?			
2. Give an example of the	communication you h	have to do if you are in charge o	f being a moderator in a s	cientific meeting?	
3. What should you do if y	ou are a resource per	son at an event (scientific meeti	ng, as a speaker at a scier	itific meeting)?	
4. How should you be a le	low should you be a leader in the era of the industrial revolution 4.0?				
5. What do you know about	5. What do you know about society 5.0?				
6. Independent task :	n tha driva within 24	hours from now			
What have you done in participa	ting in the organization	on this year			
1 Organization name pla	ce address of organiz	vation in Malang			
2. Your position in the Or	ganization				
3. An important experience	e in your life in the or	rganization			
4. The things you like/disl	ike in the organization	n			
5. What strengths/weaknes	sses do you think you	have in the organization?			
6. The things that you con	6. The things that you consider important in life in the organization				
7. Hope in the future for the development of the organization					
8. The importance of organization to your life					
WORKING METHOD					
Individual					
OUTER FORMAT					
UAS Student Answers					
INDICATORS, CRITERIA A	INDICATORS, CRITERIA AND WEIGHT ASSESSMENT				
(indicator)	: 100%				

The UAS assessment weight is 20% of 100% of the assessment for this course				
IMPL	EMENTATION SCHEDULE			
17th w	4 hours			
OTHE	RS REQUIRED:			
REFERENCES				
1)	1) Siti Romlah, 2018, Communication and Organizational Studies, Polynema Teaching Module, Malang			
Suppo	rters:			
1)	Romlah, Siti, and Deddy Kusbianto, 2012, Organization and Leadership, Teaching Module, Polynema, Malang			
2)	Deddy KPA, Communication Studies in Organizations, Polynema, 2007			
3)	Gari Yukl, 2007, Leadership in Organizations, Prentice Hall			
4)	Muchlas, Makmuri, 2005, Organizational Behavior, 1st Edition, Gajah University Press, Yogyakarta			
5)	Louis Carter, David Ulrich, and Marshall Goldsmith, 2004, Best Practices in Leadership Development and Organizational Change, Pfeiffer Wiley.			

# ASSESSMENT AND EVALUATION PLAN

#### **Statistics and Computing**

Week	Sub-CP-MK	Subject	Assessment form	Weight
1	<ul> <li>Students understand and can explain the basic concepts of statistics</li> <li>Students are able to distinguish between descriptive and inferential statistics</li> <li>Students know the use of computational statistics in general</li> </ul>	<ul> <li>Understanding statistics</li> <li>Types of statistics</li> <li>The benefits of computational statistics in various fields</li> </ul>	• Task 1: Oral test	Task 1: 1 % Task 2: 1.5 % Task 3: 1.5 % Task 4: 1.5 % Assignment 5: 1.5 % Task 6: 1.5 %
2	<ul> <li>Students understand the meaning of data</li> <li>Students are able to distinguish the types of data</li> <li>Students know data collection techniques</li> </ul>	<ul> <li>Definition of data</li> <li>Data types</li> <li>Data collection technique</li> </ul>	<ul> <li>Task 2: written assignment</li> <li>Quiz 1 (2 questions)</li> </ul>	Quiz 1: 1 5% UTS: 2 0%
3	Able to apply data collection techniques	Primary data and secondary data	<ul> <li>Assignment 3: written assignment and presentation</li> <li>Quiz 1 ( 3 questions)</li> </ul>	
4		Quiz 1		
5	<ul> <li>Students are able to understand the meaning of data centering</li> <li>Students are able to understand and apply the mean, median, mode</li> </ul>	<ul> <li>Definition of data centering</li> <li>Means</li> <li>Median</li> <li>mode</li> </ul>	<ul> <li>Task 4: written assignment</li> <li>U TS (1 question)</li> <li>U US (1 question)</li> </ul>	
6	<ul> <li>Students are able to explain the concept of data distribution</li> <li>Students are able to explain and apply range, variance, and standard deviation calculations</li> <li>Students are able to understand the tendency of data centers on data distribution</li> </ul>	<ul> <li>The basic concept of data distribution</li> <li>Measures of data distribution (range, variance, standard deviation)</li> <li>Symmetric and asymmetric distribution of data</li> </ul>	<ul> <li>Task 5: written assignment</li> <li>UTS ( 2 questions)</li> <li>UAS ( 1 question)</li> </ul>	
7	<ul> <li>Students are able to understand the concept of opportunity</li> <li>Students are able to understand calculation techniques in the concept</li> </ul>	<ul> <li>Definition of opportunity</li> <li>Calculation techniques in odds</li> <li>Set concept</li> </ul>	<ul> <li>Task 6: written assignment</li> <li>UTS (2 questions)</li> <li>UAS (1 question)</li> </ul>	

o	<ul> <li>of probability (permutations and combinations)</li> <li>Students master the concept of set</li> </ul>	LITS		
9	<ul> <li>Students are able to apply probability calculation techniques</li> <li>Students are able to apply Bayesian rules</li> </ul>	<ul> <li>Opportunity calculation technique application</li> <li>Bayes Rule</li> </ul>	<ul> <li>Assignment 7 : written assignment</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	
10	<ul> <li>Students are able to apply the normal distribution</li> <li>Students are able to apply the concept of discrete distribution</li> </ul>	Normal Distribution	<ul> <li>Task 8: written assignment</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	Task 7 : 1.5% Task 8: 1.5% Assignment 9: 1.5%
11	<ul> <li>Students are able to understand the concept of population</li> <li>Students are able to understand the sample concept</li> <li>Students are able to understand sampling techniques</li> <li>Students are able to apply sampling techniques</li> </ul>	<ul> <li>Population Concept</li> <li>Sample Concept</li> <li>Sampling technique</li> </ul>	<ul> <li>Task 9: oral test</li> <li>Quiz 2 (1 question)</li> <li>UAS (1 question)</li> </ul>	Assignment 10: 1.5% Assignment 11: 1.5% Assignment 12: 1.5% Quiz 2: 1 5% UAS: 30%
1 2		Quiz 2		
13	<ul> <li>Students understand Confidence Intervals</li> <li>Students are able to understand the basic concept of a hypothesis</li> <li>Students are able to understand the steps of hypothesis testing</li> </ul>	<ul> <li>Confidence Intervals</li> <li>Hypothesis testing steps</li> </ul>	<ul> <li>Assignment 10 : written assignment</li> <li>UAS (1 question)</li> </ul>	
14	Students understand the types of hypotheses	<ul><li>One Way Hypothesis</li><li>Two Way Hypothesis</li></ul>	• Assignment 11: written assignment	
15	Students understand and are able to apply techniques to perform simple regression analysis	Simple regression analysis	• Assignment 12: written assignment	
16	Students understand and are able to apply techniques to perform multiple regression analysis	Multiple regression analysis	• Assignment 13: written assignment	
17		UAS		

TOTAL	WEIGHT

100%

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ON THE R. M.	A Charles
15	

ASSESSMENT METHOD						
SUBJECT	Computational Statistics					
CODE	RTI214003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	4	
SUPPORTING LECTURER	Muhammad Afif Hendrawan, S	S.Kom., MT	· ·			
	Dr. Rakhmat Arianto, S.ST., M	I.Ko m				
	Elok Nur Hamdana, ST, MT					
ASSESSMENT FORMS						
Case study						
ASSESSMENT TITLE						
Quiz 1						
SUB COURSE LEARNING ACHIEVE	MENTS					
Students understand and can explain the b	asic concepts of statistics					
Students are able to distinguish between d	escriptive and inferential statistic	CS				
Students know the use of computational st	atistics in general					
Students understand the meaning of data						
Students are able to distinguish the types of data						
Students know data collection techniques						
Able to apply data collection techniques						
DESCRIPTION						
There is data on the nutritional status of cl	nildren under five in Magelang C	City based on District and Gender. From these	e data, it is known that there	are 4 categories of nutritional group	upings,	
viz						
1. Nutrition is very lacking						
2. Malnutrition						
3. Good nutrition						
4. More nutrition						
The file can be opened at the following lir	ık: <u>https://drive.google.com/file/c</u>	d/117IBg4tIq0HBv90F6MpKYXbJDgv57fV	e/view?usp=sharing			
Based on the file, explain what data there 1. Can the toddler nutrition data be catego	is and the data type of each sata orized as one-way data or two-wa	ay data? Explain why.				

weighed.

3. The Health Office of Kabapan Magelang wants to know the percentage of nutrition data for toddlers for each category. Make a data presentation according to the request.

4. The Regent of Magelang wants to make a policy related to assistance to improve toddler nutrition. Therefore, the Regent must know the number of children under five for each category in all sub-districts in Magelang Regency. This data will be very useful for prioritizing assistance later. To make it easier for the Regent, what presentation can be shown

180 minutes

#### WORKING METHOD

Questions are accessed and answers are uploaded via e-learning lmsslc .polinema.ac.id

# **OUTER FORMAT**

Job Object: quiz

Outer Form: student quiz answers

INDICATORS, CRITERIA AND WEIGHT ASSESSMENT

Conformity of answers: 100%

The score for Quiz 1 is 15% of 100% for this course

#### **IMPLEMENTATION SCHEDULE**

4th week

**OTHERS REQUIRED:** 

#### REFERENCES

Walpole, Ronald E. Raymond H. Myers, 2007, Probability & Statistics for Engineers & Scientists, 8th Edition, Prentice-Hall Inc.

Fosyth, David, 2018, Probability and Statistics for Computer Science, Springer

Kadir, 2015, Applied Statistics: Concepts, Examples and Data Analysis with the SPSS/Lisrel Program in Research, 3rd Edition, Rajawali Pers.

Widarjono, Agus, Applied Statistics with Excel and SPSS, UPP STIM YKPN, 2015



ASSESSMENT METHOD						
SUBJECT	Computational Statisti	ics				
CODE	RTI214003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	4	
SUPPORTING LECTURER	Muhammad Afif Hend	drawan, S.Kom., MT				
	Dr. Rakhmat Arianto,	S.ST., M.Ko m				
	Elok Nur Hamdana, S	T, MT				
ASSESSMENT FORMS						
writing test						
ASSESSMENT TITLE						
Quiz 2						
SUB COURSE LEARNING ACHIEV	EMENTS					
Students are able to apply probability cal	culation techniques					
Students are able to apply Bayesian rules	3					
Students are able to apply the normal dis	tribution					
Students are able to apply the concept of	discrete distribution					
Students are able to understand the concept of population						
Students are able to understand the sample concept						
Students are able to understand sampling techniques						
Students are able to apply sampling techniques						
DESCRIPTION						
Answer questions related to week 9-11 n	naterial					
WORKING METHOD						
Questions are accessed and answers are u	uploaded via e-learning lr	mssle .polinema.ac.id				
OUTER FORMAT						
Job Object: quiz						
Outer Form: student quiz answers						
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT						
Conformity of answers: 10 0 %						
The score for Quiz 2 is 15% of 100% for this course						
IMPLEMENTATION SCHEDULE						

12th week	180 minutes
OTHERS REQUIRED:	
REFERENCES	
Walpole, Ronald E. Raymond H. Myers, 2007, Probability & Statistics for Engineers & Scientists, 8th Edition, Prentice-Hall Inc.	
Fosyth, David, 2018, Probability and Statistics for Computer Science, Springer	
Kadir, 2015, Applied Statistics: Concepts, Examples and Data Analysis with the SPSS/Lisrel Program in Research, 3rd Edition, Rajawal	li Pers.
Widarjono, Agus, Applied Statistics with Excel and SPSS, UPP STIM YKPN, 2015	



ASSESSMENT METHOD						
SUBJECT	Computational Statistics					
CODE	RTI214003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	4	
SUPPORTING LECTURER	Muhammad Afif Hendrawan, S	S.Kom., MT				
	Dr. Rakhmat Arianto, S.ST., N	1.Ko m				
	Elok Nur Hamdana, ST, MT					
ASSESSMENT FORMS						
Case study						
ASSESSMENT TITLE						
UTS						
SUB COURSE LEARNING ACHIEVE	EMENTS					
Students understand and can explain the b	basic concepts of statistics					
Students are able to distinguish between d	lescriptive and inferential statistic	28				
Students know the use of computational s	tatistics in general					
Students understand the meaning of data						
Students are able to distinguish the types of data						
Students know data collection techniques						
Able to apply data collection techniques						
Students are able to understand the meaning of data centering						
Students are able to understand and apply the mean, median, mode						
Students are able to explain the concept of data distribution						
Students are able to explain and apply range, variance, and standard deviation calculations						
Students are able to understand the tendency of data centers on data distribution						
Students are able to understand the concept of opportunity						
Students are able to understand calculation techniques in the concept of probability (permutations and combinations)						
Students master the concept of set						
DESCRIPTION						
There is transaction data for 1 year from a	a company that produces FMCG	goods. As a data analyst, you are asked to	process purchase order (whole	sale) data to obtain inform	ation easily.	
The following is a purchase order data link from the company: https://drive.google.com/file/d/13cH5D1oY6aWTaVEHqJ1O0E58suAj0wBu/view?usp=sharing						

Here are some cases that you must solve:

a. Look for the 5 products with the largest number of orders. (25 points)

b. Based on point a, make a bar chart of these products (20 points)

c. Calculate the mean, median, Q1, Q3, and IQR from the data point a. (35 points)

d. Calculate the variance and standard deviation values from point a data. (20 points)

e. BONUS! SKEWNESS ANALYSIS!

Find the distribution of product orders at point a by month. Draw a bar chart, then conclude whether the product orders show a slope. If so, in which direction

**WORKING METHOD** 

Questions are accessed and answers are uploaded via e-learning lmsslc .polinema.ac.id

OUTER FORMAT

Work Object: UTS

Outcome Form: answers to questions and results of student analysis

INDICATORS, CRITERIA AND WEIGHT ASSESSMENT

Conformity of answers: 10 0 %

UTS assessment weight is 20 % of 100% of the assessment for this course

**IMPLEMENTATION SCHEDULE** 

8th week

**OTHERS REQUIRED:** 

REFERENCES

Walpole, Ronald E. Raymond H. Myers, 2007, Probability & Statistics for Engineers & Scientists, 8th Edition, Prentice-Hall Inc.

Fosyth, David, 2018, Probability and Statistics for Computer Science, Springer

Kadir, 2015, Applied Statistics: Concepts, Examples and Data Analysis with the SPSS/Lisrel Program in Research, 3rd Edition, Rajawali Pers.

Widarjono, Agus, Applied Statistics with Excel and SPSS, UPP STIM YKPN, 2015

180 minutes



ASSESSMENT METHOD						
SUBJECT	Computational Statistic	S				
CODE	RTI214003	WEIGHT (credits) / hour	2 credits / 4 hours	SEMESTER	4	
SUPPORTING LECTURER	Muhammad Afif Hend	rawan, S.Kom., MT				
	Dr. Rakhmat Arianto, S	S.ST., M.Ko m				
	Elok Nur Hamdana, ST	Г, МТ				
ASSESSMENT FORMS						
Case study						
ASSESSMENT TITLE						
UAS						
SUB COURSE LEARNING ACHIEVE	MENTS					
Students understand and can explain the b	asic concepts of statistics	3				
Students are able to distinguish between d	lescriptive and inferential	statistics				
Students know the use of computational s	tatistics in general					
Students understand the meaning of data	Students understand the meaning of data					
Students are able to distinguish the types of data						
Students know data collection techniques						
Able to apply data collection techniques						
Students are able to understand the meaning of data centering						
Students are able to understand and apply the mean, median, mode						
Students are able to explain the concept of data distribution						
Students are able to explain and apply range, variance, and standard deviation calculations						
Students are able to understand the tendency of data centers on data distribution						
Students are able to understand the concept of opportunity						
Students are able to understand calculation	Students are able to understand calculation techniques in the concept of probability (permutations and combinations)					
Students master the concept of set						
Students are able to apply probability calc	ulation techniques					
Students are able to apply Bayesian rules						
Students are able to apply the normal distribution						
Students are able to apply the concept of o	liscrete distribution					

tudents are able to understand the concept of population			
tudents are able to understand the sample concept			
tudents are able to understand sampling techniques			
tudents are able to apply sampling techniques			
tudents understand Confidence Intervals			
tudents are able to understand the basic concept of a hypothesis			
tudents are able to understand the steps of hypothesis testing			
tudents understand the types of hypotheses			
tudents understand and are able to apply techniques to perform simple regression analysis			
tudents understand and are able to apply techniques to perform multiple regression analysis			
DESCRIPTION			
Conduct an analysis of a case study			
VORKING METHOD			
Questions are accessed and answers are uploaded via e-learning Imsslc .polinema.ac.id			
DUTER FORMAT			
Vork Object: UAS			
Outcome Form: answers to questions and results of student analysis			
INDICATORS, CRITERIA AND WEIGHT ASSESSMENT			
Conformity of answers: 100%			
JAS assessment weight is 30 % of 100% of the assessment of this course			
MPLEMENTATION SCHEDULE			
Veek 17 180 minutes			
OTHERS REQUIRED:			
REFERENCES			
Valpole, Ronald E. Raymond H. Myers, 2007, Probability & Statistics for Engineers & Scientists, 8th Edition, Prentice-Hall Inc.			
Fosyth, David, 2018, Probability and Statistics for Computer Science, Springer			
Kadir, 2015, Applied Statistics: Concepts, Examples and Data Analysis with the SPSS/Lisrel Program in Research, 3rd Edition, Rajawali Pers.			

Widarjono, Agus, Applied Statistics with Excel and SPSS, UPP STIM YKPN, 2015

Appendix 2 of the 2021 Curriculum RPS





# BIBLIOGRAPHY

- Anderson, L., & Krathwohl, D. (2001). A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. New York: Longman.
- Bloom, BS (1984). Taxonomy of Educational Objectives Book 1: Cognitive Domain 2nd edition Edition. Boston: Addison Wesley Publishing Company.
- Minister of Education and Culture of the Republic of Indonesia. (2013, June 10).
   Implementation of the Indonesian National Qualification Framework for Higher
   Education. Regulation of the Minister of Education and Culture of the Republic of
   Indonesia Number 73 of 2013. Jakarta, Jakarta, Indonesia: Ministry of Education and
   Culture of the Republic of Indonesia.
- Minister of Education and Culture of the Republic of Indonesia. (2014, August 21).
  Diplomas, Competency Certificates, and Higher Education Professional Certificates.
  Regulation of the Minister of Education and Culture of the Republic of Indonesia
  Number 81 of 2014. Jakarta, Jakarta, Indonesia: Ministry of Education and Culture of the Republic of Indonesia.
- Minister of Education and Culture of the Republic of Indonesia. (2020, January 24). National Higher Education Standards. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020. Jakarta, Jakarta, Indonesia: Ministry of Education and Culture of the Republic of Indonesia.
- Minister of Education and Culture of the Republic of Indonesia. (2020, January 24). Accreditation of Study Programs and Universities. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 5 of 2020. Jakarta, Jakarta, Indonesia: Ministry of Education and Culture of the Republic of Indonesia.
- President of the Republic of Indonesia. (2012, January 17). Indonesian National Qualifications Framework. Regulation of the President of the Republic of Indonesia Number 8 of 2012. Jakarta, Jakarta, Indonesia: Minister of Law and Human Rights of the Republic of Indonesia.
- President of the Republic of Indonesia. (2012, August 10). Higher education. Law Number 12 of 2012. Jakarta, Jakarta, Indonesia: Ministry of the State Secretariat of the Republic of Indonesia.