

CURRICULUM OF 2017
DIII INFORMATICS MANAGEMENT STUDY PROGRAM
INFORMATION TECHNOLOGY DEPARTMENT
ACADEMIC YEAR : 2017 / 2018

SEMESTER 1

No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF171001	Civic Education	2		2	3		3
2	RIF171002	Pancasila Education	2		2	3		3
3	RIF171003	Organization And Communication Science	2		2	3		3
4	RIF171004	Office Computer Applications		2	2		4	4
5	RIF171005	English For Information Technology 1	2		2	3		3
6	RIF171006	Information Technology Concepts	2		2	4		4
7	RIF171007	Discrete Mathematics	2		2	4		4
8	RIF171008	Occupational Health And Safety	2		2	4		4
9	RIF171009	Programming Fundamental	2		2	4		4
10	RIF1710010	Programming Fundamentals (Lab.)		3	3		6	6
TOTAL HOURS / CREDIT PER WEEKS			16	5	21	28	10	38

SEMESTER 2

No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF172001	Religious Education	2		2	3		3
2	RIF172002	Documentation Techniques	2		2	3		3
3	RIF172003	Academic Writing	2		2	4		4
4	RIF172004	Operating System	2		2	4		4
5	RIF172005	Object-Oriented Software Development	2		2	4		4
6	RIF172006	Web Designing And Programming		3	3		6	6
7	RIF172007	Database	2		2	3		3
8	RIF172008	Database (Lab)		2	2		4	4
9	RIF172009	Data Structure	2		2	3		3
10	RIF1720010	Data Structure (Lab.)		2	2		4	4
TOTAL HOURS / CREDIT PER WEEKS			14	7	21	24	14	38

SEMESTER 3

No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF173001	User Interface Design	2		2	3		3
2	RIF173002	English For Information Technology 2	2		2	3		3
3	RIF173003	Advanced Web Programming		3	3		6	6
4	RIF173004	Information System	2		2	4		4
5	RIF173005	Advanced Database		3	3		6	6
6	RIF173006	Computer Networking	2		2	3		3
7	RIF173007	Computer Networking (Lab.)		2	2		4	4
8	RIF173008	Object-Oriented Programming	2		2	3		3
9	RIF173009	Object-Oriented Programming (Lab.)		3	3		6	6
TOTAL HOURS / CREDIT PER WEEKS			10	11	21	16	22	38

SEMESTER 4

No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF174001	Multimedia Computing	2		2	4		4
2	RIF174002	Mobile Programming		3	3		6	6
3	RIF174003	Project Management	2		2	4		4
4	RIF174004	Project 1		3	3		8	8
5	RIF174005	Computer Network Management		3	3		6	6
6	RIF174006	E-Business	2		2	4		4
7	RIF174007	Database Management System		3	3		6	6
TOTAL HOURS / CREDIT PER WEEKS			6	12	18	12	26	38

SEMESTER 5

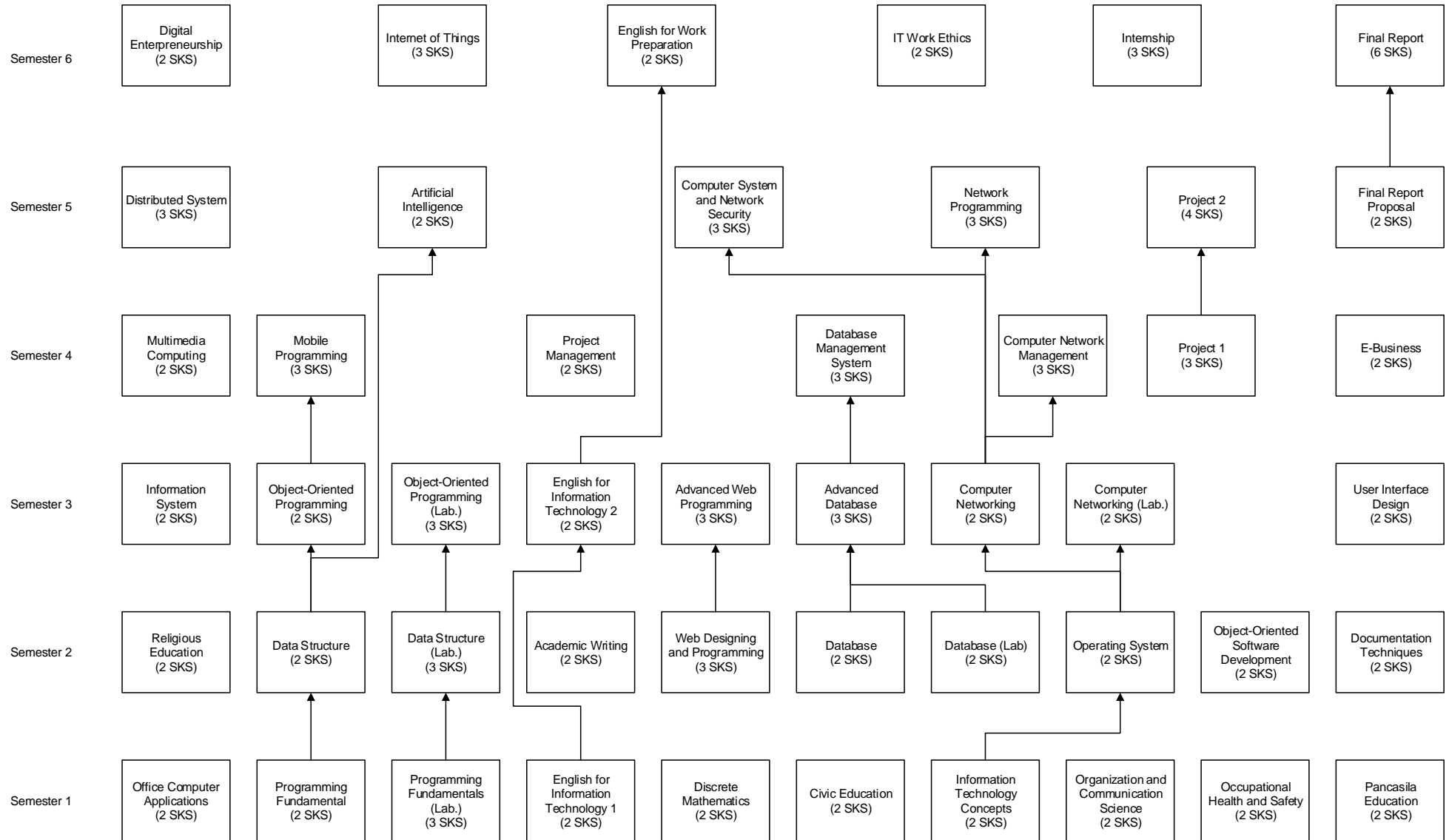
No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF175001	Distributed System		3	3		6	6
2	RIF175002	Project 2		4	4		12	12
3	RIF175003	Artificial Intelligence		2	2		4	4
4	RIF175004	Computer System And Network Security		3	3		6	6
5	RIF175005	Final Report Proposal		2	2		6	6
6	RIF175006	Network Programming		3	3		6	6
TOTAL HOURS / CREDIT PER WEEKS			0	17	17	0	40	40

SEMESTER 6

No	CODE	COURSE	CREDIT		CREDIT	HOURS / WEEK		HOURS
			THEORY	PRACT		THEORY	PRACT	
1	RIF176001	Digital Entrepreneurship	2		2	4		4
2	RIF176002	English For Work Preparation	2		2	3		3
3	RIF176003	IT Work Ethics	2		2	3		3
4	RIF176004	Internship		3	3		14	14
5	RIF176005	Final Report		6	6		14	14
TOTAL HOURS / CREDIT PER WEEKS			6	9	15	10	28	38

TOTAL HOURS / CREDIT PER WEEKS	CREDIT		CREDIT	HOURS / WEEK		HOURS
	THEORY	PRACT		THEORY	PRACT	
		52	61	113	90	140

Curriculum Chart Academic Year 2017/2018



SHORT SYLLABUS 2017
DIPLOMA 3 INFORMATION MANAGEMENT PROGRAM
INFORMATION TECHNOLOGY MANAGEMENT
2017/2018 ACADEMIC YEAR

Course	: Civic Education
Code	: RIF171001
Credit / Hours	: 2 Credits (3 hours/week)
Semester	: 1
Graduate Learning Outcomes	: 1 Contribute in developing the quality of living a life as a member of society, citizen, and also for the development of civilization based on Pancasila 2 Play a role as a proud citizen who loves his/her country, and have great nationalism and responsibility to his/her country. 3 Respect the diversity in cultures, views, religions and beliefs, and also point of views or inventions. 4 Cooperate and have a sense of social empathy and concern to society and environment. 5 Obey the law and have great discipline as a member of the society and citizen.
Learning Outcomes	: To understand both the theoretical and practical concepts of living a life as a member of society, citizen as discussed in Country and Citizenship, Archipelagic Concepts, The National Defense, human Rights, Democracy, Good Governance, and Civil Society topics.
Topics of Discussion	: Country and Citizenship, Archipelagic Concepts, The National Defense, human Rights, Democracy, Good Governance, and Civil Society topics.
References	: 1. Robert Klitgaard, dkk. 2002. Penuntun Pemerantasan Korupsi dalam Pemerintahan Daerah. Buku Obor, Jakarta. 2. Ahmad Zaki, Membentuk Karakter Bangsa yang Jujur bebas Korupsi, http://ogalooqi.com/membentuk-karakter-bangsa-jujur-bebas-korupsi/ , diakses 7 Juni 2012. 3. Ariesti Vetami Gaos, Melawan regenerasi Koruptor, http://perspektif.net/english/article.php?article_id=1441 , akses 11 Juni 2012. 4. Erika Revida, Korupsi di Indonesia: Masalah dan Solusinya, http://repository.usu.ac.id/bitstream/123456789/3800/1/fisip-erika1.pdf , diakses tanggal 7 Juni 2012. 5. Fathur Rahman, Pendidikan Anti Koupsi, http://www.equator-news.com/kolom/20120410/pendidikan-anti-korupsi , akses 11 Juni 2012 6. Iding R. Hasan, Menakar Urgensi Amendemen Kelima UUD 1945, Pikiran Rakyat, 26 Agustus 2010, diakses tanggal 27 Agustus 2010. 7. M. Bashori Muchsin, PNS Muda dan Berhala Uang, Media Indonesia, 13 Desember 2011. 8. Mirza Nasution, Hukum dan Konstitusi, http://buscar-manuales.com/download/fungsi-dan-kedudukan-konstitusi-6.html , diakses tanggal 15 Juli 2012.

Course : **Pancasila Education**

Code : **RIF171002**

Credit / Hours : **2 Credits (3 hours/week)**

Semester : **1**

Graduate Learning Outcomes :

- 1 Uphold the humanity values in performing his/her role based on religion, moral, and ethics.
- 2 Contribute in developing the quality of living a life as a member of society, citizen, and also for the development of civilization based on Pancasila
- 3 Play a role as a proud citizen who loves his/her country, and have great nationalism and responsibility to his/her country.
- 4 Respect the diversity in cultures, views, religions and beliefs, and also point of views or inventions.
- 5 Abide the law and have great discipline as a member of the society and citizen.

Learning Outcomes : Understand the concepts Pancasila in Historical References, Pancasila as the Country Policy, Pancasila as an Ideology, Pancasila as a Philosophy System, Pancasila as the Basic of Ethical System, Pancasila as the Basic of Science Development, Pancasila as a Paradigm of Living as a Citizen and a Member of Society, Pancasila and Human Rights, Tipikor in Pancasila Perspective

Topics of Discussion :

Understand the concepts Pancasila in Historical References, Pancasila as the Country Policy, Pancasila as an Ideology, Pancasila as a Philosophy System, Pancasila as the Basic of Ethical System, Pancasila as the Basic of Science Development, Pancasila as a Paradigm of Living as a Citizen and a Member of Society, Pancasila and Human Rights, Tipikor in Pancasila Perspective

References :

1. Alrasid, Harun. 2003. Naskah UUD 1945 Sesudah Empat Kali Diubah oleh MPR. Jakarta : UI Press.
2. Kaelan, H. (ed). 2002. Pendidikan Kewarganegaraan Untuk Perguruan Tinggi. Yogyakarta : Paradigma.
3. Pasha, Mustafa Kamal dkk. 2003. Pancasila dalam Tinjauan Historis, Yuridis, dan Filosofis. Yogyakarta: Citra Karsa Mandiri.

Course : **Organization and Communication Science**

Code : **RIF171003**

Credit / Hours : **2 Credits (3 hours/week)**

Semester : **1**

Graduate Learning Outcomes :

- 1 Cooperate and have social empathy and concern to both society and the environment.
- 2 Understand the quality assurance and the fundamental of occupational health and safety (K3) in IT product development.

Learning Outcomes : Understand the concepts of organization and leadership especially in the information system project management.

Topics of Discussion :

Organization and leadership especially in the information system project management.

References :

1. Romlah, Siti, dan Deddy Kusbianto, 2012, Organisasi dan Kepemimpinan, Modul Ajar, Polinema, Malang
2. Gari Yukl, 2007, Leadership in Organizations, Prentice Hall.
3. Muchlas, Makmuri, 2005, Perilaku Organisasi, Edisi ke 1, Gajah University Press, Yogyakarta.
4. Louis Carter, David Ulrich, and Marshall Goldsmith, 2004, Best Practices in Leadership Development and Organization Change, Pfeiffer Wiley.

Course : **Office Computer Applications**

Code : **RIF171004**

Credit / Hours : **2 Credits (4 hours/week)**

Semester : **1**

Graduate Learning Outcomes : 1 Able to cooperate, communicate, and innovate as a professional.

2 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.

3 able to show excellent and measurable performance

Learning Outcomes : Able to implement the fundamentals of computer application in Microsoft Office (Word, PowerPoint, and Excel) and Excel Macro in which later can be applied in the computer.

Topics of Discussion :

The fundamentals of computer application in Microsoft Office (Word, PowerPoint, and Excel) and Excel Macro in which later can be applied in the computer.

References :

1. Online Training Solutions, 2003, Microsoft Office Excel 2003 Step By Step, Microsoft Press.
2. Faithe Wempen, 2004, PowerPoint Advanced Presentation Techniques, John Wiley & Sons.

Course : **English for Information Technology 1**

Code : **RIF171005**

Credit / Hours : **2 Credits (3 hours/week)**

Semester : **1**

Graduate Learning Outcomes : 1 Possess good understanding in quality assurance and the fundamental of occupational health and safety (K3) in IT product development.

2 Able to communicate both orally and in written using English as the international language.

Learning Outcomes : Posses a good command in the concepts of Describing Objects and Their Functions, Giving and Writing Instructions, Using Imperatives and Sequences, Comparing a Process Using Time Clause, Expressing Ideas and Opinion, Reading Graphs/Charts, Using Appropriate Charts/Graphs to Present A Mini Survey, Describing Future Plans, Describing Jobs, Analyzing Problems and Giving Possible Solutions, Using Modals to Show Possibility and Ability.

Topics of Discussions :
Describing Objects and Their Functions, Giving and Writing Instructions, Using Imperatives and Sequences, Comparing a Process Using Time Clause, Expressing Ideas and Opinion, Reading Graphs/Charts, Using Appropriate Charts/Graphs to Present A Mini Survey, Describing Future Plans, Describing Jobs, Analyzing Problems and Giving Possible Solutions, Using Modals to Show Possibility and Ability.

References :
1. Demetriades, Dinos. 2008. Information Technology Workshop. Oxford: Oxford University Press.
2. Glasbergen, Randy. 2007. Office Safety Latest Innovation (Cartoon). (Online), (www.ebrainy.com, accesses on May 17, 2008)Glendinning, Eric H and McEwan, John. 2002 a. Basic English for Computing. Oxford: Oxford University Press.

Course : **Information Technology Concepts**
Code : **RIF171006**
Credit / Hours : **2 Credits (4 hours/week)**
Semester : **1**
Graduate Learning Outcomes : Possess good command on smart computing in the problem solving process based on analysis and defined information.
Learning Outcomes : Possess good command on the concepts of technology, Technology Innovation, Science and Technology Development, Engineering Ethics, ICT Development, Computer System, Computer System Concepts, Computer Networking and Internet, IT Application in various fields of works, IT Certification.
Topics of Discussion :
The concepts of technology, Technology Innovation, Science and Technology Development, Engineering Ethics, ICT Development, Computer System, Computer System Concepts, Computer Networking and Internet, IT Application in various fields of works, IT Certification.
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.

Course	: Discrete Mathematics
Code	: RIF171007
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 1
Graduate Learning Outcomes	: Possess good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs.
Learning Outcomes	: Possess ample understanding on the concepts of Discrete, Logic, Sets, Mathematical Induction, Relation and Function, Recursive, Theory of Numbers, Combinatorial, Graph, Tree.
Topics of Discussion	: The concepts of Discrete, Logic, Sets, Mathematical Induction, Relation and Function, Recursive, Theory of Numbers, Combinatorial, Graph, Tree.
References	: <ol style="list-style-type: none"> 1. Yan watequlis, Cahya Rahmad, Deasy Sandhya Elya, 2017, Matematika Diskrit, Polinema press. 2. Kenneth H. Rosen, 2007, Discrete Mathematics and Its Application, Mc Graw-Hill. 3. C.L. Liu, 2008, Elements of Discrete Mathematics, McGraw-Hill, Inc. 4. Steven G. Krantz, 2009, Discrete Mathematics Demystified, McGraw-Hill.

Course	: Occupational Health and Safety
Code	: RIF171008
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 1
Graduate Learning Outcomes	: 1 Possess an ample knowledge on the theoretical concepts on ITC product testing and documentation using suitable method approach. 2 Able to perform standard documentation of ITC product development process
Learning Outcomes	: Possess an ample knowledge on the concepts of Occupational health and Safety (K3), K3 Policy, Public Health, Work Place , Occupational Safety, Insurance, K3 Organization.
Topics of Discussion	: The concepts of Occupational Health and Safety (K3), K3 Policy, Public Health, Work Place , Occupational Safety, Insurance, K3 Organization.
References	: <ol style="list-style-type: none"> 1. Undang-undang No.1 tahun 1970 tentang keselamatan kerja. 2. Undang-undang No.13 tahun 2003 tentang Ketenagakerjaan (Paragraf 5 Pasal 86 dan 87: Keselamatan 3. UU No. 3 tahun 1992 (Jaminan Sosial Tenaga Kerja) 4. PP No. 33 Tahun 1977 5. Keputusan Menteri Kesehatan No. 61/MENKES/SK/II/ 1998 Tentang : Persyaratan Kesehatan Lingkungan Kerja 6. Hadi Setia Tunggal, 2007, Peraturan sistem manajemen keselamatan dan kesehatan kerja, Harvarindo

Course	: Programming Fundamental
Code	: RIF171009
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 1
Graduate Learning Outcomes	: Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes	: Possess an ample knowledge on the concepts of Algorithm, Algorithm Representation, Translator, Programming Languages, Types of Data, Variable, Constant, Value, Expression, Input-Output, Case Analysis, Branching, Iteration, Array, Function/Procedure
Topics of Discussion	: The concepts of Algorithm, Algorithm Representation, Translator, Programming Languages, Types of Data, Variable, Constant, Value, Expression, Input-Output, Case Analysis, Branching, Iteration, Array, Function/Procedure
References	: 1. Sebesta, Robert, 2016. Concept of programming languages edisi global, Addison Wesley, Publ. 2. Sestoft, Peter, 2017. Programming Language Concepts, Springer, Publ. 3. Munir, Rinaldi, dan Leoni Lidya, 2004. Algoritma dan Pemrograman Buku 2, Penerbit Informatika Bandung

Course	: Programming Fundamentals (Lab.)
Code	: RIF1710010
Credit / Hours	: 3 Credits (6 hours/week)
Semester	: 1
Graduate Learning Outcomes	: 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs. 2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones. 3 Able to show excellent and measurable performance
Learning Outcomes	: Able to apply and implement The concepts of Algorithm, Algorithm Representation, Translator, Programming Languages, Types of Data, Variable, Constant, Value, Expression, Input-Output, Sequence, Case Analysis, Branching, Iteration, Array, Function/Procedure.
Topics of Discussion	: The concepts of Algorithm, Algorithm Representation, Translator, Programming Languages, Types of Data, Variable, Constant, Value, Expression, Input-Output, Sequence, Case Analysis, Branching, Iteration, Array, Function/Procedure.
References	: 1. Sebesta, Robert, 2016. Concept of programming languages edisi global, Addison Wesley, Publ. 2. Sestoft, Peter, 2017. Programming Language Concepts, Springer, Publ.

3. T. Henny Febriana Harumy, 2016. Belajar Dasar Algoritma dan Pemograman C++, Deepublish.

Course : **Religious Education**
Code : **RIF172001**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **2**
Graduate Learning Outcomes : 1 Possess a sense of piety and able to show the religious nature.
2 uphold the value of humanity in carrying out one's duties based on religion, morals, and ethics.
Learning Outcomes : Possess a good understanding on the meaning of religion, Aqidah, Sharia and Morals, God, The Universe and Human Being, Religion Science and technology and Arts, Islam Perspective in Socio-Cultural, Politics, and Economic Issues.
Topics of Discussion :
Religion, Aqidah, Sharia and Morals, God, The Universe and Human Being, Religion Science and technology and Arts, Islam Perspective in Socio-Cultural, Politics, and Economic Issues.
References :
1. Al-Qur'an dan Terjemahnya, Jakarta, Depag.
2. Chaney, David (ed. Idi Subandy Ibrahim), 2005, Life styles Sebuah pengantar Komprehensif, Jalasutra, Jogjakarta.
3. Hossein Nasr, Sayyed, 2003, The Heart Of Islam, Pesan-pesan Universal Islam Untuk Kemanusiaan (terj. Nurasih Faqih), Mizan, Bandung.

Course : **Documentation Techniques**
Code : **RIF172002**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **2**
Graduate Learning Outcomes : Possess good command on data base modeling concepts, both logical conceptual and physical for system needs.
Learning Outcomes : Possess good command on Standard Document Software Engineering concepts
Topics of Discussion :
Standard Document Software Engineering concepts
References :
1. Ian Sommerville, 2007, Software Engineering, 8th Edition, Addison Wesley
2. Software Engineering Standards Committee of the IEEE Computer Society, "IEEE Standard 1063-2001 Software User Documentation".

Course	: Academic Writing
Code	: RIF172003
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 2
Graduate Learning Outcomes	: 1 Internalizing the values, norms, and academic ethics. 2 Possess good knowledge on the quality assurance and the fundamental of occupational health and safety (K3) in IT product development. 3 Able to cooperate, communicate, and innovate as a professional. 4 Able to document, store, secure, and restore the data to guarantee the validity and also preventing plagiarism.
Learning Outcomes	: Possess good knowledge on sentence, effective sentence, word choice, paragraph, report and scientific work.
Topics of Discussion	: Knowledge on sentence, effective sentence, word choice, paragraph, report and scientific work.
References	: 1. Ekojono, 2013, Metodologi Penelitian, Modul Ajar, Polinema, Malang. 2. Kusbianto, Deddy, 2007, Metode Penelitian, Modul Ajar, Polinema, Malang. 3. Kusbianto, Deddy, 2007, Metode Penelitian Praktek, Modul Ajar, Polinema, Malang.

Course	: Operating System
Code	: RIF172004
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 2
Graduate Learning Outcomes	: Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes	: Possess the knowledge on Operating System Fundamental Concepts, Life Cycle, Inter-Process Communication, Synchronization, Multi Process and Multi Thread, Memory Management, Process Scheduling, IO Connection, File System.
Topics of Discussion	: Konsep Dasar Sistem Operasi, Siklus Hidup , Komunikasi Antar Proses, Sinkronisasi, Multiproses dan Multi Thread, Manajemen Memori, Penjadwalan Proses, Koneksi IO, File System.
References	: 1. Andrew S. Tanenbaum, 2008, Modern Operating System, 3th Edition, Prentice Hall. 2. William Stallings, 2008, Operating System, 6th Edition, Prentice Hall.

Course	: Object-Oriented Software Development
Code	: RIF172005
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 2
Graduate Learning Outcomes	: 1 Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs. 2 Possess ITC knowledge fundamentals (fundamentals of algorithm, data structure and its manipulation, programming languages, database, computer networking, etc.) to solve ITC issues.
Learning Outcomes	: Possess good understanding on the concepts of Introduction to Software Engineering, Software Process (SDLC), Software Requirements, System Modeling, Introduction to Object-Oriented Design, Testing Fundamentals, Software Management Maintenance Concepts.
Topics of Discussion	: Introduction to Software Engineering, Software Process (SDLC), Software Requirements, System Modeling, Introduction to Object-Oriented Design, Testing Fundamentals, Software Management Maintenance Concepts.
References	: 1. Brown, David William, 2002. An Introduction to Object-Oriented Analysis: Objects and UML in Plain English, 2nd edition, Wiley India Pvt. Limited. 2. Shouhong Wang, Hai Wang, 2012, Information Systems Analysis and Design, Universal Publishers. 3. John Hunt, 2013, The Unified Process for Practitioners: Object-Oriented Design, UML and Java, Second Edition, Springer Science & Business Media.

Course	: Web Designing and Programming
Code	: RIF172006
Credit / Hours	: 3 Credits (6 hours/week)
Semester	: 2
Graduate Learning Outcomes	: Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes	: Able to apply and implement Web Tech, CSS, JS, HTML, PHP, Basic Programming in PHP, Form Handling, Cookies and Session, Database Programming in PHP.
Topics of Discussion	: Web Tech, CSS, JS, HTML, PHP, Basic Programming in PHP, Form Handling, Cookies and Session, Database Programming in PHP.
References	: 1. Deborah Levinson, Todd Belton, 2017, Build Your First Web App, MIT Press.

2. Harvey Deitel and Paul Deitel, 2007, Internet & World Wide Web: How to Program, 4th Edition, Prentice Hall.
3. Collins, Marc, 2017, Pro HTML5 with CSS, JavaScript, and Multimedia, APress.

Course	: Database
Code	: RIF172007
Credit / Hours	: 2 Credits (3 hours/week)
Semester	: 2
Graduate Learning Outcomes	: Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes	: Possess good knowledge in Database Concepts, Database Architecture and Data Modeling, Data Normalization, SQL DDDL, SQL DML, Query Select, Join, Sub Query, Nested Query, ER Diagram Design, ER Diagram Mapping to Relational Model.
Topics of Discussion	:
	Database Concepts, Database Architecture and Data Modeling, Data Normalization, SQL DDDL, SQL DML, Query Select, Join, Sub Query, Nested Query, ER Diagram Design, ER Diagram Mapping to Relational Model.
References	:
	<ol style="list-style-type: none"> 1. Elmasry, R. and S. Navathe, 2016, Fundamental of Database Systems, 3rd edition, Addison Wesley. 2. Andrew J. Opperl, 2010, Databases Demystified, McGraw-Hill/Osborne. 3. Fathansyah , 2015, Basis Data Dasar, Bandung Informatika.

Course	: Database (Lab)
Code	: RIF172008
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 2
Graduate Learning Outcomes	<ol style="list-style-type: none"> 1 Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs. 2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones. 3 Able to show excellent and measurable performance

Learning Outcomes : Able to perform Data Normalization, MySQL DDL, MySQL DML, MySQL Query Select, MySQL Jin, MySQL Sub Query, MySQL Nested Query, SQL Server SQL DDL, SQL Server SQL DML, SQL Server Query Select, SQL Server Jin, SQL Server jin, SSQL Server String, Filtering, SQL Server Aggregate, (Mod 4,5,6,9 Querying)

Topics of Discussion :

Data Normalization, MySQL DDL, MySQL DML, MySQL Query Select, MySQL Jin, MySQL Sub Query, MySQL Nested Query, SQL Server SQL DDL, SQL Server SQL DML, SQL Server Query Select, SQL Server Jin, SQL Server jin, SSQL Server String, Filtering, SQL Server Aggregate, (Mod 4,5,6,9 Querying)

References :

1. Elmasry, R. and S. Navathe, 2016, Fundamental of Database Systems, 3rd edition, Addison Wesley.
2. Andrew J. Opperl, 2010, Databases Demystified, McGraw-Hill/Osborne.
3. Fathansyah , 2015, Basis Data Dasar, Bandung Informatika.

Course : **Data Structure**
Code : **RIF172009**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **2**

Graduate Learning Outcomes : Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.

Learning Outcomes : Possess good knowledge on the concepts of Searching, Sorting, Queue, Stack, Tree, Graph, Bruteforce, Greedy, Divide-Conquer, Decrease-Conquer, DFS, BFS, Backtracking, Branch and Bound, String machine, Dynamic Programming.

Topics of Discussion :

Searching, Sorting, Queue, Stack, Tree, Graf, Bruteforce, Greedy, Devide-Conquer, Decrease-Conquer, DFS, BFS, Backtracking, Branch and Bound, String Machine, Dynamic Programming.

References :

1. Hariyanto, Bambang, 2007, Struktur Data, Penerbit Informatika-Bandung.
2. Sjukani, M, 2007, Algoritma (Algoritma dan Struktur Data 1) dengan C, C++, dan Java. Mitra Wacana Media
3. Sjukani, M, 2007, Struktur Data (Algoritma dan Struktur Data 2) dengan C, C++. Mitra Wacana Media.
4. T. Henny Febriana Harumy, 2016. Belajar Dasar Algoritma dan Pemograman C++, Deepublish.

Course : **Data Structure (Lab.)**
Code : **RIF1720010**
Credit / Hours : **2 Credits (4 hours/week)**
Semester : **2**
Graduate Learning Outcomes : 1 Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones.
3 able to show excellent and measurable performance
Learning Outcomes : Able to implement Searching, Sorting, Queue, Stack, Tree, Graph, Bruteforce, Greedy, Divide-Conquer, Decrease-Conquer, DFS, BFS, Backtracking, Branch and Bound, String machine, Dynamic Programming.
Topics of Discussion :
Searching, Sorting, Queue, Stack, Tree, Graf, Bruteforce, Greedy, Devide-Conquer, Decrease-Conquer, DFS, BFS, Backtracking, Branch and Bound, String Machine, Dynamic Programming.
References :
1. Hariyanto, Bambang, 2007, Struktur Data, Penerbit Informatika-Bandung.
2. Sjukani, M, 2007, Algoritma (Algoritma dan Struktur Data 1) dengan C, C++, dan Java. Mitra Wacana Media.
3. Sjukani, M, 2007, Struktur Data (Algoritma dan Struktur Data 2) dengan C, C++. Mitra Wacana Media.
4. T. Henny Febriana Harumy, 2016. Belajar Dasar Algoritma dan Pemograman C++, Deepublish.

Course : **User Interface Design**
Code : **RIF173001**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **3**
Graduate Learning Outcomes : Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes : Possess good knowledge in the concepts of Introduction to Human-Computer Interaction, Human Factor, types of Dialog, Input Output Devices, Interface Design, Ergonomic Aspects, Evaluation Techniques.
Topics of Discussion :
Introduction to Human-Computer Interaction, Human Factor, types of Dialog, Input Output Devices, Interface Design, Ergonomic Aspects, Evaluation Techniques.
References :
1. Kalbach, James. 2007. Designing Web Navigation. O'Reilly.
2. England, David, et al. 2010. Task Models and Diagrams for User Interface Design. Springer.

3. Ballard, Barbara. 2007. Designing the Mobile User Experience. Little Springs Design, Inc., USA.
4. Galitz, Wilbert O. 2007. The Essential Guide to UI Design. Third Edition.

Course	: English for Information Technology 2
Code	: RIF173002
Credit / Hours	: 2 Credits (3 hours/week)
Semester	: 3
Graduate Learning Outcomes	: 1 Possess good understanding in quality assurance and the fundamental of occupational health and safety (K3) in IT product development. 2 Able to communicate both orally and in written using English as the international language.
Learning Outcomes	: Posses a good command in the concepts of Describing Objects and Their Functions, Describing about Process, Expressing Certainty using If-Clause, Analyzing problems and Providing Their Solutions and Preventions, Writing Short Report Based on A Newspaper/Articles, Describing Strengths and Weaknesses, Writing A Review, Describing Past Experiences and Habits, Analyzing Updated Articles/Topics in the Media, Writing Scientific Journal/Article Summary, Future Perfect Tense, Connectors (and, but, or, and so), Adverb of Quantity.
Topics of Discussion	: Describing Objects and Their Functions, Describing about Process, Expressing Certainty using If-Clause, Analyzing problems and Providing Their Solutions and Preventions, Writing Short Report Based on A Newspaper/Articles, Describing Strengths and Weaknesses, Writing A Review, Describing Past Experiences and Habits, Analyzing Updated Articles/Topics in the Media, Writing Scientific Journal/Article Summary, Future Perfect Tense, Connectors (and, but, or, and so), Adverb of Quantity.
References	: 1. Demetriades, Dinos. 2008. Information Technology Workshop. Oxford: Oxford University Press. 2. Olejniczak, Maja. 2011. English for Information Technology 1. Essex: Pearson Education Limited.

Course	: Advanced Web Programming
Code	: RIF173003
Credit / Hours	: 3 Credits (6 hours/week)
Semester	: 3
Graduate Learning Outcomes	: 1 Posses a good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs. 2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones. Able to show excellent and measurable performance

Learning Outcomes : Able to implement Web Front End-Back-End, JQuery, Bootstrap, Angular, REST, CI Configuration, MVC Concepts, Form and Database, CRUD, Access Rights, Report.

Topics of Discussion :
Web Front End-Back-End, JQuery, Bootstrap, Angular, REST, CI Configuration, MVC Concepts, Form and Database, CRUD, Access Rights, Report.

- References** :
1. Jubilee Enterprise, 2017, Pemrograman AngularJS untuk Pemula, Jubilee Enterprise.
 2. Joe Brinkman, 2010, jQuery for ASP.NET Developers, John Wiley & Sons.
 3. Jim Webber, et al, 2010, REST in Practice: Hypermedia and Systems Architecture, O'Reilly Media, Inc.
 4. Lenawati M, 2007, Macromedia Dreamweaver 8 dengan PHP, Penerbit Andi, Yogyakarta.

Course : **Information System**

Code : **RIF173004**

Credit / Hours : **2 Credits (4 hours/week)**

Semester : **3**

- Graduate Learning Outcomes** :
- 1 Possess ITC knowledge fundamentals (fundamentals of algorithm, data structure and its manipulation, programming languages, database, computer networking, etc.) to solve ITC issues.
 - 2 Possess good command on smart computing in the problem solving process based on analysis and defined information.

Learning Outcomes : Possess good command on the Information System Fundamental Concepts, Business Fundamental, Individual Information System and Group Collaboration System, Business Operation System, DSS and Expert System, E-Commerce, ERP, CRM, Global Information System,

Topics of Discussion :
Information System Fundamental Concepts, Business Fundamental, Individual Information System and Group Collaboration System, Business Operation System, DSS and Expert System, E-Commerce, ERP, CRM, Global Information System, The Impact of Information System.

- References** :
1. Stair, Ralph, Reynolds, George. 2017. Fundamentals of Information Systems, Cengage Learning.
 2. Rainer, Turban and Potter, 2007, Introduction to Information Systems, 1st Edition John Wiley & Sons.
 3. D.P. Goyal, 2014., Management Information Systems: Managerial Perspectives), 4th edition, Vikas Publishing House.
 4. Kenneth C. Laudon, Jane P. Laudon, 2017, Management Information Systems: Managing the Digital Firm, Pearson.
 5. Jane P. Laudon, Kenneth C. Laudon, 2007, Management Information Systems: Managing the Digital Firm, 10th Edition, Prentice Hall.

Course : **Advanced Database**
Code : **RIF173005**
Credit / Hours : **3 Credits (6 hours/week)**
Semester : **3**
Graduate Learning Outcomes : 1 Posses a good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs.
2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones.
3 Able to show excellent and measurable performance
Learning Outcomes : Able to apply and implement Transact SQL - Select, Data types, Built In Function, Sub Query, Expression Table (View, Scalar Function, Inline Table Value Function, Derived Table, Common Table Expression), Set Operator, Window Rank, Pivoting, Stored Procedure, Programming, Error Handling, Rollback, Commit, Database Final Project.
Topics of Discussion :
Transact SQL - Select, Data types, Built In Function, Sub Query, Expression Table (View, Scalar Function, Inline Table Value Function, Derived Table, Common Table Expression), Set Operator, Window Rank, Pivoting, Stored Procedure, Programming, Error Handling, Rollback, Commit, Database Final Project.
References :
1. Itzik Ben-Gan, et al., 2012, Querying Microsoft SQL Server 2012: Exam 70-461 Training Kit , Microsoft.
2. Orin Thomasn, et al., 2012, Training Kit (Exam 70-462): Administering Microsoft SQL Server 2012,

Course : **Computer Networking**
Code : **RIF173006**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **3**
Graduate Learning Outcomes : Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes : Possess good command on the Concepts of Communication Networking, protocol, Model, Address, Application Layer, Application Protocol Transport Layer, Network Layer, IPv4, Subnetting, Data Link
Topics of Discussion :
Communication Networking, protocol, Model, Address, Application Layer, Application Protocol Transport Layer, Network Layer, IPv4, Subnetting, Data Link Protocol, Physical Layer.
References :
1. Stalling, William. , 2007, Data and Computer Communication, Prentice Hall Inc.
2. Lammle, Todd. , 2016, CCNA ICND2 Study Guide: Exam 200-105, John Wiley & Sons.

Course : **Computer Networking (Lab.)**
Code : **RIF173007**
Credit / Hours : **2 Credits (4 hours/week)**
Semester : **3**
Graduate Learning Outcomes : 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones.
3 Able to show excellent and measurable performance
Learning Outcomes : Able to identify Hardware Networking, Cabling, IP Configuration, Dns, ftp and Remote Service, Netstat-nmap, Ping and Route, Subnetting, Tracerroute, Arp, Wireless, Network Design Analysis, Router
Topics of Discussion :
Identify Hardware Networking, Cabling, IP Configuration, Dns, ftp and Remote Service, Netstat-nmap, Ping and Route, Subnetting, Tracerroute, Arp, Wireless, Network Design Analysis, Router Configuration.
References :
1. Stalling, William. , 2007, Data and Computer Communication, Prentice Hall Inc.
2. Lammle, Todd. , 2016, CCNA ICND2 Study Guide: Exam 200-105, John Wiley & Sons.

Course : **Object-Oriented Programming**
Code : **RIF173008**
Credit / Hours : **2 Credits (3 hours/week)**
Semester : **3**
Graduate Learning Outcomes : Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes : Possess good command in OOP Concept, Class and Object, Encapsulation, Inheritance, Abstraction, Polymorphism, GUI, Collection.
Topics of Discussion :
OOP Concept, Class and Object, Encapsulation, Inheritance, Abstraction, Polymorphism, GUI, Collection.
References :
1. Horstmann, C. S., & Cornell, G., 2007. Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.
2. Horstmann, C. S., & Cornell, G. 2008. Core Java Volume II–Advanced Features, Eighth Edition. Network

Course : **Object-Oriented Programming (Lab.)**
Code : **RIF173009**
Credit / Hours : **3 Credits (6 hours/week)**
Semester : **3**
Graduate Learning Outcomes : 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones.
3 Able to show excellent and measurable performance
Learning Outcomes : Able to implement OOP Concept, Class and Object, Encapsulation, Inheritance, Abstraction, Polymorphism, GUI, Collection.
Topics of Discussion :
OOP Concept, Class and Object, Encapsulation, Inheritance, Abstraction, Polymorphism, GUI, Collection.
References :
1. Horstmann, C. S., & Cornell, G., 2007. Core Java Volume I–Fundamentals, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.
2. Horstmann, C. S., & Cornell, G. 2008. Core Java Volume II–Advanced Features, Eighth Edition. Network Circle, Santa Clara: Prentice Hall.

Course : **Multimedia Computing**
Code : **RIF174001**
Credit / Hours : **2 Credits (4 hours/week)**
Semester : **4**
Graduate Learning Outcomes : Possess theoretical concepts of mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
Learning Outcomes : Possess good command in Multimedia Representation (Sound, Video, Animation, Movie) in Digital Format, Multimedia Concept, Audio Fundamentals, Audio Coding and Standard, Video Fundamentals, Image/Video Coding, MPEG Coding, Media Protection, Media Retrieval,
Topics of Discussion :
Multimedia Representation (Sound, Video, Animation, Movie) in Digital Format, Multimedia Concept, Audio Fundamentals, Audio Coding and Standard, Video Fundamentals, Image/Video Coding, MPEG Coding, Media Protection, Media Retrieval, Media distribution.
References :
1. Borko Furht, 2012, Multimedia Systems and Techniques, Springer Science & Business Media.
2. Multimedia Networking, From Theory to Practice, Cambridge University Press, 2009.

Course	: Mobile Programming
Code	: RIF174002
Credit / Hours	: 3 Credits (6 hours/week)
Semester	: 4
Graduate Learning Outcomes	: 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
	2 Able to complete a wide range of work through software application development using suitable methods, both standard and non-standard ones.
	3 Able to show excellent and measurable performance
Learning Outcomes	: Able to develop Mobile Devices, Android Project Building, Android Studio, View, XML, Layout, Thread, Activity and Intent, Android Resource API (Phone, GPS, SMS, Camera, etc.), Mobile-Based Database programming, Web Service Consumer-REST.
Topics of Discussion	: Mobile Devices, Android Project Building, Android Studio, View, XML, Layout, Thread, Activity and Intent, Android Resource API (Phone, GPS, SMS, Camera, etc.), Mobile-Based Database programming, Web Service Consumer-REST.
References	:
	1. Felker D.; Dobbs J, 2011, Android Application Development For Dummies, Wiley Publishing Inc., USA.
	2. DiMarzio, J.F., 2008, Android A Programmer's Guide, The McGraw-Hill Companies.
	3. Meier, Reto, 2009, Professional Android Application Development, Wiley Publishing, Inc.
	4. Nirav Mehta, 2008, Mobile Web Development, Packt Publishing.
	5. Sing Li and Jonathan Knudsen, 2009, Beginning J2ME: From Novice to Professional, Third Edition, Apress.
	6. Jonathan Knudsen, 2008., Kicking Butt with MIDP and MSA: Creating Great Mobile Applications, Addison Wesley.

Course	: Project Management
Code	: RIF174003
Credit / Hours	: 2 Credits (4 hours/week)
Semester	: 4
Graduate Learning Outcomes	: 1 Show a sense of responsibility in his/her field of work independently.
	2 Internalize the spirit of independence, struggle, and entrepreneurship.
	3 Possess ITC knowledge fundamentals (fundamentals of algorithm, data structure and its manipulation, programming languages, database, computer networking, etc.) to solve ITC issues.
	4 Possess good command on Database Modeling Concepts, both logical and physical conceptual for computerized information system needs.

- 5 Possess an ample knowledge on the theoretical concepts on ITC product testing and documentation using suitable method approach.
- 6 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the software.
- 7 Able to document the process of ITC product development using standard document and to communicate effectively to whom it may concern.
- 8 Able to perform evaluation process to the supervised-group and to manage competence development.
- 9 Able to document, store, secure, and restore the data to guarantee the validity and also preventing plagiarism.
- 10 Able to analyze needs, to adapt, and to demonstrate one's ability in self-upgrading (life-long learning).

Learning Outcomes : Possess good command in the concepts of Introduction to Project Management, Project Management Cycle, Project Scope Management, Time-Table Management, Budget Management, Project Quality Management (QMS), Human Resources Management, Risk Management, Communication Management, PDCA, Software Development Standard Process.

Topics of Discussion :

Introduction to Project Management, Project Management Cycle, Project Scope Management, Time-Table Management, Budget Management, Project Quality Management (QMS), Human Resources Management, Risk Management, Communication Management, PDCA, Software Development Standard Process.

References :

1. Murali Chemuturi, Thomas M. Cagley, 2010, Mastering Software Project Management: Best Practices,
2. Kathy Schwalbe, 2009, Information Technology Project Management, 6th Edition, Course Technology.

Course	: Project 1
Code	: RIF174004
Credit / Hours	: 3 Credits (8 hours/week)
Semester	: 4
Graduate Learning Outcomes	: <ol style="list-style-type: none"> 1 Internalize values, norms, and academic ethics. 2 Show a sense of responsibility in his/her field of work independently. 3 Internalize the spirit of independence, struggle, and entrepreneurship. 4 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.

- 5 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the software.
- 6 Able to implement ITC product design in accordance with the system needs as defined by the blueprint.
- 7 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 8 Able to show excellent and measurable performance.
- 9 Able to write process and result report accurately and valid also communicate them effectively to whom it may concern.
- 10 Able to cooperate, communicate, and innovate as a professional.

Learning Outcomes : Able to Analyze the Available IT Product, Contribute to the Available IT Product, Design New IT Product, Advisability of New IT Product.

Topics of Discussion :
Analysing the Available IT Product, Contribution to the Available IT Product, Designing of New IT Product, Advisability of New IT Product.

References :

1. Panitia Program Studi, 2013, Panduan Pelaksanaan dan pelaporan proyek, Pedoman Pelaksanaan Proyek Tingkat I, Polinema, Malang.
2. Sprague, R.H. and McNurlin, B.C. , 2009, Information Systems Management in Practice, Prentice-Hall.

Course : **Computer Network Management**

Code : **RIF174005**

Credit / Hours : **3 Credits (6 hours/week)**

Semester : **4**

Graduate Learning Outcomes :

- 1 Possess good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs.
- 2 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
- 3 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 4 Able to show excellent and measurable performance

Learning Outcomes : Able to implement Static Routing, Dynamic Routing, Remote Service, Ftp-dhcp, Web Server, Mail Server, Dns Server, Mikrotik Config, Hotspot-User Management, Firewall, Bandwidth Management.

Topics of Discussion :

Static Routing, Dynamic Routing, Remote Service, Ftp-dhcp, Web Server, Mail Server, Dns Server, Mikrotik Config, Hotspot-User Management, Firewall, Bandwidth Management.

References :

1. Hadi, pranoto Suryo, 2007, Manajemen Jaringan Komputer, Modul Ajar, Polinema, Malang.
2. Tanenbaum, Andrew S. ,2015, Jaringan Komputer Edisi Bahasa Indonesia, Pearson Education.
3. Stalling, William. , 2013, Data and Computer Communication, Pearson Education.
4. Lammle, Todd. , 208, Cisco Certified Network Associates, John Wiley & Sons.

Course : E-Business

Code : RIF174006

Credit / Hours : 2 Credits (4 hours/week)

Semester : 4

Graduate Learning Outcomes : Possess good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs.

Learning Outcomes : Possess good command in Introduction to E-Business, B2C, B2B, B2G, E-Commerce.

Topics of Discussion :

Introduction to E-Business, B2C, B2B, B2G, E-Commerce.

References :

1. Gary P. Schneider , 2011., e-Business, Cengage Learning.
2. CTI Reviews, 2016, e-Business, Organizational and Technical Foundations, Cram101 Textbook Reviews.
3. Salam, A.F., and Jason R. Stevens, 2007, Semantic Web Technologies and E-Business: Toward the Integrated Virtual Organization and Business Process Automation, Idea Group Inc.
4. Ray Lester, 2008, The New Walford: Guide to Reference Resources, Volume 2, Facet Pub.
5. Soares, Carlos, and friends, 2008, Applications of Data Mining in E-Business and Finance, The authors and IOS Press.

Course : Database Management System

Code : RIF174007

Credit / Hours : 3 Credits (6 hours/week)

Semester : 4

Graduate Learning Outcomes :

- 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
- 2 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 3 Able to show excellent and measurable performance

Learning Outcomes : Able to implement Backup Restore Database, Data Import Export, Authentication and Authorization, Database Roles, Audit, Automating SQL Management, Security Configuration, Monitoring, Managing Multiple Server.

Topics of Discussion : Database Backup-Restore, Data Import-Export, Authentication and Authorization, Database Roles, Audit, Automating SQL Management, Security Configuration, Monitoring, Managing Multiple Server.

References :
1. Brian Knight, dkk, 2008, Professional Microsoft SQL Server 2008 Administration, Wrox.
2. Kalen Delaney, 2009, Microsoft® SQL Server® 2008 Internals (Pro - Developer), Microsoft Press.

Course : **Distributed System**

Code : **RIF175001**

Credit / Hours : **3 Credits (6 hours/week)**

Semester : **5**

Graduate Learning Outcomes : Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.

Learning Outcomes : Able to implement the concept of Introduction to Distributed System, Communication, Process, Distributed Operating System, File Service, Time & Coordination, Share Data & Transaction, Distributed Data Management, Parallel Processing, Security.

Topics of Discussion : Introduction to Distributed System, Communication, Process, Distributed Operating System, File Service, Time & Coordination, Share Data & Transaction, Distributed Data Management, Parallel Processing, Security

References :
1. Maurice Herlihy, et all. 2012, The Art of Multiprocessor Programming, Elsevier.
2. Arora, Sanjeev; Barak, Boaz (2009), Computational Complexity – A Modern Approach, Cambridge, ISBN 978-0-521-42426-4.
3. Rajkumar Buyya, 2014, Intelligent Distributed Computing, Springer.

Course : **Project 2**

Code : **RIF175002**

Credit / Hours : **4 Credits (12 hours/week)**

Semester : **5**

Graduate Learning Outcomes : 1 Internalize values, norms, and academic ethics.
2 Show a sense of responsibility in his/her field of work independently.

- 3 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
- 4 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the software.
- 5 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 6 able to show excellent and measurable performance
- 7 Able to write process and result report accurately and valid also communicate them effectively to whom it may concern.
- 8 Able to cooperate, communicate, and innovate as a professional.
- 9 Able to show a sense of responsibility on one's group performance and both supervise and evaluate on the work assigned to his/her subordinate.

Learning Outcomes : Able to implement Project 1 IT Product Development by regarding Project 1 IT Product Development Marketing through Digital Media.

Topics of Discussion :
Project 1 IT Product Development by regarding Project 1 IT Product Development Marketing through Digital Media.

- References** :
1. Panitia Program Studi, 2013, Panduan Pelaksanaan dan pelaporan proyek, Pedoman Pelaksanaan Proyek Tingkat II, Polinema, Malang.
 2. Barbara Canning McNurlin, et al , 2009, Information Systems Management in Practice, 8th edition, Prentice-Hall.

Course : **Artificial Intelligent**
Code : **RIF175003**
Credit / Hours : **2 Credits (4 hours/week)**
Semester : **5**

- Graduate Learning Outcomes** :
- 1 Able to perform error-testing to IT product using most suitable method.
 - 2 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
 - 3 Able to show excellent and measurable performance

Learning Outcomes : Able to implement and develop Problem Solving, Knowledge Representation, Expert System, Natural Language Processing, Uncertainty, Fuzzy Logic, Artificial Neural Network, Searching, Planning.

Topics of Discussion :

Problem Solving, Knowledge Representation, Expert System, Natural Language Processing, Uncertainty, Fuzzy Logic, Artificial Neural Network, Searching, Planning.

References :

1. Harris C. Michael, 2011, Artificial Intelligence, Penerbit Marshall Cavendish Benchmark.
2. Norvig, Peter , 2014, Paradigms of Artificial Intelligence Programming: Case Studies in Common Lisp,

Course : **Computer System and Network Security**

Code : **RIF175004**

Credit / Hours : **3 Credits (6 hours/week)**

Semester : **5**

Graduate Learning Outcomes :

- 1 Possess good understanding in theoretical concepts in Mathematics and Fundamental Engineering in software engineering (desktop, web, or mobile), computer networking and other ITC fields as defined by the needs.
- 2 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
- 3 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 4 Able to show excellent and measurable performance

Learning Outcomes : Able to implement Security Concept and TCP/IP and OSI Related Network Security Terminology Konsep, Access Control Issues, Operating System Security (windows and Linux), Network Level Security, Communication Security, Security Tools, Security Attack and Response, Cryptography, Virus and Malware Protection, Application Level Security.

Topics of Discussion :

Security Concept and TCP/IP and OSI Related Network Security Terminology Konsep, Access Control Issues, Operating System Security (windows and Linux), Network Level Security, Communication Security, Security Tools, Security Attack and Response, Cryptography, Virus and Malware Protection, Application Level Security.

References :

1. Kusbianto, Deddy, 2014, Keamanan Sistem dan Jaringan Komputer, Modul Ajar, Polinema, Malang.
2. Chris McNab, 2008. Network Security Assessment”, O’reilly, Canada.

Course : **Final Report Proposal**

Code : **RIF175005**

Credit / Hours : **2 Credits (6 hours/week)**

Semester : **5**

Graduate Learning Outcomes :

- 1 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the software.

- 2 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 3 Able to show excellent and measurable performance
- 4 Able to write process and result report accurately and valid also communicate them effectively to whom it may concern.

Learning Outcomes : Able to perform Preliminary Proposal Process.

Topics of Discussion :
Preliminary Proposal Process.

References :

1. Panitia Program Studi, 2013, Panduan Laporan Akhir, Polinema, Malang.
2. Santoso, Nurudin, 2007, Manajemen Proyek, Modul Ajar, Polinema, Malang.
3. Santoso, Nurudin, 2007, Praktikum Manajemen Proyek, Modul Ajar, Polinema, Malang.

Course : **Network Programming**

Code : **RIF175006**

Credit / Hours : **3 Credits (6 hours/week)**

Semester : **5**

Graduate Learning Outcomes :

- 1 Able to apply mathematics and engineering fundamentals in the field of software engineering (desktop, web, or mobile), computer networking, and other ITC fields as defined by the needs.
- 2 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 3 Able to show excellent and measurable performance

Learning Outcomes : Able to implement Server Configuration, Routing Configuration, Input Stream, Output Stream, Filter Input Stream, Filter Output Steam, Object Persistence, Object Serialization, UDP, Socket For Client, Socket For Server, Secure Socket, Multicast, URL dan URI, Multithread, HTTP, RMI.

Topics of Discussion :
Server Configuration, Routing Configuration, Input Stream, Output Stream, Filter Input Stream, Filter Output Steam, Object Persistence, Object Serialization, UDP, Socket For Client, Socket For Server, Secure Socket, Multicast, URL dan URI, Multithread, HTTP, RMI.

References :

1. Graba, Jan, 2007, An Introduction to Network Programming with Java, Springer.
2. Qing Li, et al., 2009, IPv6 Socket API Extensions: Programmer's Guide, Morgan Kaufmann.

Course : **Digital Entrepreneurship**

Code : **RIF176001**

Credit / Hours : **2 Credits (4 hours/week)**

Semester : **6**

Graduate Learning Outcomes : 1 Show a sense of responsibility in his/her field of work independently.
 2 Internalize the spirit of independence, struggle, and entrepreneurship.
 3 Able to show excellent and measurable performance

Learning Outcomes : Possess good understanding in Introduction to Entrepreneurship, Business Plan, Marketing, E-Marketing, Digital Era Marketing, E-customer, Social Media Marketing, Product Development and New Service, E-CRM, Digital Marketing Management.

Topics of Discussion :
 Introduction to Entrepreneurship, Business Plan, Marketing, E-Marketing, Digital Era Marketing, E-customer, Social Media Marketing, Product Development and New Service, E-CRM, Digital Marketing Management.

References :
 1. Ariwibowo S. Adhi, 2009, Kecerdasan Entrepreneur: Memulai, Membangun, Merawat, dan Mengembangkan Bisnis Anda, Jakarta: PT. Elex Media Kompetindo.
 2. Michael A. Hitt; R. Duane Ireland; David G. Sirman; and Cheryl A. Trahms, 2011, "Strategic Entrepreneurship: Creating Value for Individuals, Organizations, and society, Academy of management, pp. 57-77.

Course : English for Work Preparation
Code : RIF176002
Credit / Hours : 2 Credits (3 hours/week)
Semester : 6

Graduate Learning Outcomes : 1 Possess good understanding in quality assurance and the fundamental of occupational health and safety (K3) in IT product development.
 2 Able to communicate both orally and in written using English as the international language.

Learning Outcomes : Possess good command in Identification Self and Others, Expressing Like and dislike, Jobs/Occupation, Preposition, Reporting Past Event, Describing Objects, Numbers and Symbols in Mathematics, Giving Instructions, Giving and Asking For Help, Reading Simple English Texts About Computing.

Topics of Discussion :
 Possess good command in Identification Self and Others, Expressing Like and dislike, Jobs/Occupation, Preposition, Reporting Past Event, Describing Objects, Numbers and Symbols in Mathematics, Giving Instructions, Giving and Asking For Help, Reading Simple English Texts About Computing.

References :
 1. Demetriades, Dinos, 2008. Information Technology Workshop, Oxford: Oxford University Press.
 2. Azar, Betty Schramper. 1999. Understanding and Using English Grammar. Prentice- Hall, Inc. New Jersey.

3. Boeckner, Keith and Brown, P Charles. 1993. Oxford English for Computing. Oxford University Press.
4. Glendinning, Eric H and Mc Ewan, John. 1993. Oxford English for Electronics. Oxford University Press.

Course	: IT Work Ethics
Code	: RIF176003
Credit / Hours	: 2 Credits (3 hours/week)
Semester	: 6
Graduate Learning Outcomes	: <ol style="list-style-type: none"> 1 Uphold the humanity values in performing his/her role based on religion, moral, and ethics. 2 Respect the diversity in cultures, views, religions and beliefs, and also point of views or inventions. 3 Abide the law and have great discipline as a member of the society and citizen. 4 Internalize values, norms, and academic ethics. 5 Show a sense of responsibility in his/her field of work independently. 6 Possess good command on smart computing in the problem solving process based on analysis and defined information.
Learning Outcomes	: Possess good understanding in IT Legal Development, Copyright Law, Brand and Domain Name Law, Media Law, Cyberjuristicion, E-commerce Law, Privacy, Data Protection, Cybercrimes and the Measures, Proof and Digital Evidence.
Topics of Discussion	: IT Legal Development, Copyright Law, Brand and Domain Name Law, Media Law, Cyberjuristicion, E-commerce Law, Privacy, Data Protection, Cybercrimes and the Measures, Proof and Digital Evidence.
References	: <ol style="list-style-type: none"> 1. Undang-undang Republik Indonesia No. 19 Th. 2002 tentang Hak Cipta. 2. Undang-undang Republik Indonesia No. 14 Th. 2001 tentang paten. 3. Undang-undang Republik Indonesia No. 14 Th. 2008 tentang Kebebasan Informasi Publik. 4. Undang-undang Republik Indonesia No. 11 Th. 2008 tentang Informasi dan Transaksi Elektronik.

Course	: Internship
Code	: RIF176004
Credit / Hours	: 3 Credits (14 hours/week)
Semester	: 6
Graduate Learning Outcomes	: <ol style="list-style-type: none"> 1 Internalizing the values, norms, and academic ethics. 2 Show a sense of responsibility in his/her field of work independently.

- 3 Internalize the spirit of independence, struggle, and entrepreneurship.
- 4 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the Software Requirements Specification (SRS).
- 5 Able to implement ITC product design in accordance with the system needs as defined by the blueprint.
- 6 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 7 Able to show excellent and measurable performance.
- 8 Able to write process and result report accurately and valid also communicate them effectively to whom it may concern.
- 9 Able to cooperate, communicate, and innovate as a professional.
- 10 Able to show a sense of responsibility on one's group performance and both supervise and evaluate on the work assigned to his/her subordinate.
- 11 Able to perform evaluation process to the supervised-group and to manage competence development independently.
- 12 Able to document, store, secure, and restore the data to guarantee the validity and also preventing plagiarism.
- 13 Able to analyze needs, to adapt, and to demonstrate one's ability in self-upgrading (life-long learning).
- 14 Able to analyze needs, to adapt, and to demonstrate one's ability in self-upgrading (life-long learning).

Learning Outcomes : Able to perform Planning, Implementation, Project Result, Internship Report, Implementation of Work in the Field.

Topics of Discussion :
Planning, Implementation, Project Result, Internship Report, Implementation of Work in the Field.

References :

1. Panitia Program Studi, 2007, Panduan Pelaksanaan dan pelaporan praktek kerja, Polinema, Malang.
2. Santoso, Nurudin, 2007, Manajemen Proyek, Modul Ajar, Polinema, Malang.
3. Santoso, Nurudin, 2007, Praktikum Manajemen Proyek, Modul Ajar, Polinema, Malang.

Course	: Final Report
Code	: RIF176005
Credit / Hours	: 6 Credits (14 hours/week)
Semester	: 6
Graduate Learning Outcomes	<ol style="list-style-type: none"> 1 Internalize values, norms, and academic ethics. 2 Show a sense of responsibility in his/her field of work independently. 3 Internalize the spirit of independence, struggle, and entrepreneurship.

- 4 Able to perform problem solving model transformation to algorithm and to perform algorithm transformation to program source using most suitable updated programming language with technology platform required by the Software Requirements Specification (SRS).
- 5 Able to implement ITC product design in accordance with the system needs as defined by the blueprint.
- 6 Possess good command on smart computing in the problem solving process based on analysis and defined information.
- 7 Able to complete a wide range of work through developing software application by applying various methods, both the standard and the non-standard.
- 8 Able to show excellent and measurable performance.
- 9 Able to write process and result report accurately and valid also communicate them effectively to whom it may concern.
- 10 Able to cooperate, communicate, and innovate as a professional.
- 11 Able to show a sense of responsibility on one's group performance and both supervise and evaluate on the work assigned to his/her subordinate.
- 12 Able to perform evaluation process to the supervised-group and to manage competence development independently.
- 13 Able to document, store, secure, and restore the data to guarantee the validity and also preventing plagiarism.
- 14 Able to document, store, secure, and restore the data to guarantee the validity and also preventing plagiarism.
- 15 Able to analyze needs, to adapt, and to demonstrate one's ability in self-upgrading (life-long learning).

Learning Outcomes

: Mampu melakukan Penyusunan Laporan (Pendahuluan, Tinjauan Pustaka, Model Analisis dan Perancangan, Implementasi, Pengujian dan Quality Assurance, Kesimpulan dan Saran), pengujian hasil, serta pembuatan jurnal ilmiah hasil penelitian.

Topics of Discussion

: Penyusunan Laporan (Pendahuluan, Tinjauan Pustaka, Model Analisis dan Perancangan, Implementasi, Pengujian dan Quality Assurance, Kesimpulan dan Saran), pengujian hasil, serta pembuatan jurnal ilmiah

References

1. Panitia Program Studi, 2013, Panduan Laporan Akhir, Polinema, Malang.
2. Santoso, Nurudin, 2007, Manajemen Proyek, Modul Ajar, Polinema, Malang.
3. Santoso, Nurudin, 2007, Praktikum Manajemen Proyek, Modul Ajar, Polinema, Malang.