RINGKASAN KURIKULUM 2016 PROGRAM STUDI S1 TEKNIK TELEKOMUNIKASI

2016 CURRICULUM SUMMARY
BACHELOR PROGRAM OF TELECOMMUNICATION ENGINEERING

PENGESAHAN

APPROVAL

Kurikulum 2016

Program Studi S1 Teknik Telekomunikasi

The Curriculum of 2016
Bachelor Program of Telecommunication Engineering

Bandung, Mei 2016

Dekan Fakultas Teknik Elektro	**Ketua Program Studi**
Dean of Electrical Engineering Faculty	Head of Program
Dr. Rina Pudji Astuti, Ir., M.T.	**Dr. Arfianto Fahmi, S.T., M.T.**

Menyetujui
Approval

Rektor Universitas Telkom
Rector of Telkom University

Prof. Ir. MochamadAshari, M.Eng., Ph.D.

PENGANTAR

INTRODUCTION

Ringkasan buku kurikulum ini berisi sejarah, deskripsi, profil lulusan, capaian pembelajaran program, struktur kurikulum, ekuivalensi kurikulum, skema transisi kurikulum serta deskripsi singkat mata kuliah program studi. Pembuatan buku ini bertujuan sebagai panduan bagi dosen beserta mahasiswa program studi S1 Teknik Telekomunikasi Universitas Telkom.

Summary of this book contains the history curriculum, program description, graduate profile, program learning outcomes, curriculum structure, equivalence curriculum, curriculum transition schemes as well as a brief description of the course of study program. The aim of this book is a guide for students and lecturers of bachelor program of Telecommunications Engineering Telkom University.

DAFTAR ISI

TABLE OF CONTENTS

PENGESAHAN i
APPROVAL i
PENGANTAR ii
INTRODUCTION ii
DAFTAR ISI iii
TABLE OF CONTENTS iii
DAFTAR GAMBAR v
TABLE OF FIGURES v
DAFTAR TABEL vi
LIST OF TABLES vi
1 SEJARAH PROGRAM STUDI 1
1 Program History 1
2 Deskripsi Program Studi 3
2 Program Descriptions 3
2.1 Visi Program Studi 3
2.1 Program Vision 3
2.2 Misi Program Studi 3
2.2 Program Mission 3
2.3 Tujuan Pendidikan Program Studi 4
2.3 Program Educational Objectives 4
3 Profil Lulusan 5
3 Graduate Profile 5
4 Capaian Pembelajaran Program Studi 5
4 Program Learning Outcome 5
4.1 Deskripsi Kemampuan Lulusan 10
4.1 Description of Graduates Ability 10
5 STRUKTUR KURIKULUM 11
6 STRUCTURE OF CURRICULUM 11
6.1 Struktur Kurikulum Program 4 Tahun 11
6.1 Structure of 4 Years Program 11
6.2 Struktur Kurikulum Program 3.5 Tahun 16
6.2 Structure of 3.5 Years Program 16
6.3 Struktur Kurikulum Program Kelas Internasional 20
6.3 Struktur of curriculum of International Class Program 20
6.4 Struktur Kurikulum Program Pindahan Diploma Ke Sarjana 2 Tahun 24
6.4 Struktur of curriculum of 2 Years Diploma To Bachelor TransferProgram 24
6.5 Struktur Kurikulum Program Pindahan Diploma Ke Sarjana 1.5 Tahun 27
6.5 Struktur of curriculum of 1.5 Years Diploma To Bachelor Transfer Program 27

7 DIAGRAM RELASI KULIAH 29
7 ORGANIGRAM OF COURSE 29
8 EKIVALENSI DENGAN KURIKULUM SEBELUMNYA 31
8 PREVIOUS CURRICULUM EQUIVALENCE 31
8.1 Ekivalensi Mata Kuliah 31
8.1 Course Equivalence 31
8.2 Skenario Ekivalensi Angkatan 2015 33
8.2 Equivalence Scenario For Class of 2015 33
8.3 Skenario Ekivalensi Angkatan 2014 37
8.3 Equivalence Scenario for Class of 2014 37
8.4 Skenario Ekivalensi Angkatan 2013 42
8.4 Equivalence Scenario for Class of 2013 42
8.5 Skenario Ekivalensi Angkatan 2012 dan sebelumnya 47
8.5 Equivalence Scenario for Class 2012 and Before 47
9 DESKRIPSI SINGKAT MATA KULIAH 48
9 BRIEF DESCRIPTION OF COURSE 48

DAFTAR GAMBAR

Gambar 1 Struktur Organisasi Program Studi 1
Gambar 2 Proses Penentuan Capaian Pembelajaran Program Studi 6
Gambar 3 Diagram Relasi Kuliah 29
Gambar 4 Mata Kuliah Tingkat 1 yang Telah diambil Angkatan 2015 33
Gambar 5 Mata Kuliah Yang Diambil Semester 3 Sampai 8 Untuk Angkatan 2015 34
Gambar 6 Mata Kuliah yang diambil pada semester 1 sampai 4 38
Gambar 7 Mata kuliah yang diambil pada semester 5 sampai 8 39
Gambar 8 Mata Kuliah yang diambil semester 1 sampai 6 44
Gambar 9 Mata Kuliah yang diambil semester 7 dan 8 45

TABLE OF FIGURES

Figure 1 The Organizational Structure of Program 2
Figure 2 Determining Process of Program Learning Outcome 8
Figure 4 Organigram of Course 30
Figure 5 The Courses Have Taken by student of class of 2015 at semester 1 and 2 35
Figure 6 Courses Have Taken By Student of Class of 2015 at 3rd semester until 8th semester 36
Figure 7 Courses have been taken at 1st semester until 4th semester 41
Figure 8 Courses have been taken at 5th semester until 8th semester 42
Figure 9 Course have been taken at 1st semester until 6th semester 46
Figure 10 Courses have been taken at 7th semester and 8th semester 47

DAFTAR TABEL

Tabel 1 Capaian Pembelajaran yang Terpetakan di Skill dan Attitude 7
Tabel 2 Profil Lulusan dan Deskripsinya..... 10
Tabel 3 Ekivalensi Mata Kuliah..... 31

LIST OF TABLES

Table 1 Program Learning Outcome mappinginto Knowledge, Skill and Attitude 9
Table 2 The Ability of Graduates Profile 10
Table 3 Course Equivalence..... 31

1 SEJARAH PROGRAM STUDI

1 Program History

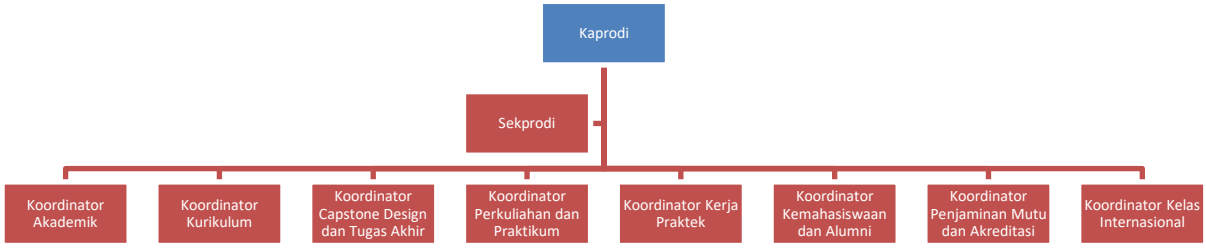
Program Studi S1 Teknik Telekomunikasi adalah program studi yang mempelajari rekayasa di bidang telekomunikasi. Ruang lingkup rekayasa meliputi aspek-aspek yang terkait dengan teknologi, protokol, layanan, desain dan teknik pengiriman informasi broadband. Agar dapat bersaing dimasa yang akan datang, mahasiswa dibekali pula dengan wawasan kemandirian, kewirausahaan serta kerjasama tim antardisiplin ilmu agar dapat berkompetisi, berkarya, berkontribusi dan mengembangkan diri di komunitas professional. Kurikulum pendidikan di Prodi S1 Teknik Telekomunikasi didesain selama 4 tahun dan mengacu pada kurikulum berbasis Outcome Based Educatiom (OBE).

Prodi S1-TT telah terakreditasi BAN PT dengan predikat "A" sesuai surat keputusan BAN-PT No. 437/SK/BAN-PT/Akred/S/XI/2014. Prodi S1-TT terdaftar pada Pangkalan Data Pendidikan Tinggi (PDPT) dengan kode Program Studi 20202 dan kode universitas 041057.

Program studi S1-Teknik Telekomunikasi (S1-TT) didirikan pada tanggal 28 September tahun 1990 oleh Ir. Cacuk Sudarijanto yang ketika itu menjabat sebagai Direktur Utama PT. Telkom. Program studi ini lahir sebagai bagian dari salah satu program studi di STT Telkom (Sekolah Tinggi Teknologi Telkom). Prodi ini didirikan untuk mengantisipasi perkembangan pesat teknologi komunikasi dan informasi dimana harus diimbangi dengan kesediaan sumber daya manusia yang mumpuni.

Pada tanggal 20 November 2007, STT Telkom bertransformasi menjadi IT Telkom (Institut Teknologi Telkom). Pada proses penggabungan menjadi Tel-U (Telkom University) pada tahun 2013, program studi S1 Teknik Telekomunikasi adalah salah program studi dibawah Fakultas Teknik Elektro (FTE).

Untuk menjalankan tridharma perguruan tinggi, program studi dipimpin oleh Ketua Program Studi (Kaprodi) dibantu oleh Sekretaris Program Studi (Sekprodi) dan beberapa koordinator. Struktur organisasi Prodi S1 Teknik Telekomunikasi adalah sebagai berikut :



Gambar 1 Struktur Organisasi Program Studi

The bachelor program of Telecommunication Engineering is a program that focus on studying in the telecommunications field. The scope of study includes the engineering aspects related to technologies, protocols, services, design and engineering of broadband information delivery. In order to compete in the future, students are provided with integrated insights independence, entrepreneurship and cooperation of the interdisciplinary team in order to compete, create, contribute and develop themselves in the professional community. The curriculum of Telecommunication Engineering is designed for 4 years and referred to the Outcome Based Educatiom (OBE).

The program has been accredited by BAN PT (Badan Akreditasi Nasional – Perguruan Tinggi) with the level of "A" (excellent) according to a decree of BAN-PT No. 437 / SK / BAN-PT / Akred / S / XI / 2014. Telecommunication Engineering program has been listed on the data base of DIKTI (PDPT) with the program code is 20202 and the university code 041 057.

Telecommunication Engineering Program was established on 28 September 1990 by Ir. Cacuk Sudarijanto when he is as President Director of PT. Telkom. The study program was born as part of one of the programs in STT Telkom (Telkom school of engineering). A program was established to anticipate the rapid development of information and communication technologies which must be matched by the willingness of qualified human resources.

On 20rd November 2007, STT Telkom transformed into IT Telkom (Telkom Institute of Technology). In the process of merging into Tel-U (Telkom University) in 2013, the Telecommunications Engineering program is a program under the Faculty of Electrical Engineering (FTE). In order to develope Tridharma, Telecommunication Engineering Program was headed by a program head and it is assisted by the Secretary Program and some coordinators. The organizational structure of Telecommunication Engineering program are as follows:

Figure 1 The Organizational Structure of Program

2 Deskripsi Program Studi
2 Program Descriptions

2.1 Visi Program Studi

2.1 Program Vision

Menjadi Program Studi S1 Teknik Telekomunikasi terkemuka di kawasan Asia Tenggara yang mampu menghasilkan sarjana Teknik Telekomunikasi yang berkeahlian di bidang informasi dan komunikasi, khususnya *wireless communication*, dan dapat mengikuti perkembangan teknologi telekomunikasi.

To be a leading Telecommunication Engineering Program in Southeast Asia in bringing out competent telecommunication engineers in information and communication, especially in wireless communication, who keep themselves updated with the development of telecommunication technology.

2.2 Misi Program Studi

2.2 Program Mission

1. Menyelenggarakan proses pendidikan unggulan untuk menghasilkan lulusan yang menguasai teknologi informasi dan telekomunikasi sesuai dengan kompetensi teknik telekomunikasi.
2. Menyelenggarakan penelitian berkualitas internasional di bidang informasi dan telekomunikasi dengan melibatkan mahasiswa secara aktif.
3. Menyelenggarakan pengabdian masyarakat dengan prinsip menyebarluaskan ilmu dan teknologi hasil penelitian kepada masyarakat luas terutama dengan bekerjasama secara sinergis dengan institusi akademis dan non akademis lain.

1. *Conducting outstanding educational process to produce graduates who are master in information and telecommunciation technology based on telecommunication engineering competence.*
2. *Conducting international quality research in the field of information and telecommunication by involving students actively.*
3. *Conducting community service with the principles of disseminating science and technology resulted from community service research especially by cooperating in synergy with other academic and non-academic institutions.*

2.3 Tujuan Pendidikan Program Studi

2.3 Program Educational Objectives

Tujuan pendidikan program studi S1 Teknik Telekomunikasi adalah :

1. Menghasilkan lulusan yang mampu berkarya dan berkontribusi secara profesional pada kemajuan bidang telekomunikasi
2. Menghasilkan lulusan yang mampu berkarya dan berkompetisi dibidang teknologi komunikasi dan informasi
3. Menghasilkan lulusan yang mampu belajar mandiri dan berkesinambungan serta mampu memanfaatkan potensi diri untuk mengembangkan diri pada potensi lingkungan

The objectives of Program educational are as follow :

1. *Able to profesionally work and contribute to the advances in the field of telecomunication*
2. *Able to work and compete in the field of information and communication technology*
3. *Has the ability to engage in autonomous and continuous learning, as well as the ability to use their full potential to develop themselves and the enviroment*

3 Profil Lulusan

3 Graduate Profile

Profil lulusan prodi S1 Teknik Telekomunikasi adalah :

"Seorang Sarjana Teknik di bidang Telekomunikasi yang professional, kompeten, dan mandiri"

Seorang tenaga professional yang mampu berkontribusi secara aktif pada kemajuan bidang telekomunikasi, berkompetisi di bidang teknologi informasi dan komputer, beradaptasi terhadap lingkungan baru, dan secara berkesinambungan mampu mengembangkan potensi dirinya

The program graduates profiles of telecommunication engineering is :

"A professional, competent, and autonomous Telecommunication engineer"

A competent professional who is able to actively contribute to the advances in the field of telecommunication, compete in information and communication technology, adapt to the new environment, as well as continuously develop himself

4 Capaian Pembelajaran Program Studi

4 Program Learning Outcome

Perumusan Capaian pembelajaran prodi (Program Outcome) ditentukan berdasarkan profil lulusan yang akan dicapai. Untuk mencapai profil lulusan tersebut diperlukan identifikasi kemampuan yang harus dicapai yang mengacu pada regulasi kurikulum internasional ABET, JABEE, IABEE, regulasi standar KKNI, masukan dari stakeholder serta trend market serta proyeksi teknologi dimasa yang akan datang. Proses tersebut dapat digambarkan sebagai berikut :

Gambar 2 Proses Penentuan Capaian Pembelajaran Program Studi

Untuk mencapai profil lulusan, diperlukan capaian pembelajaran program studi yang terdefinisi kemampuan lulusan sebagai berikut :

1. Bertakwa kepada Tuhan Yang Maha Esa dan mampu menunjukkan sikap religius
2. Mempunyai pengetahuan dan kemampuan untuk menggunakan ilmu dasar matematika, sains, dan rekayasa
3. Mempunyai kemampuan merancang suatu sistem, komponen, atau proses untuk memenuhi kebutuhan yang diharapkan dalam batasan-batasan realistis termasuk pengiriman konten *broadband* melalui metode rekayasa di bidang telekomunikasi
4. Mempunyai kemampuan merancang dan melaksanakan eksperimen, termasuk menganalisis dan menginterpretasikan data secara ilmiah menggunakan metode ilmiah
5. Mempunyai kemampuan untuk mengidentifikasi, memformulasi, dan menyelesaikan permasalahan rekayasa telekomunikasi
6. Mempunyai keterampilan dalam mengoperasikan perangkat keras, menggunakan aplikasi perangkat lunak dan kemampuan pemrograman yang berkaitan dengan teknologi informasi dan telekomunikasi
7. Mempunyai kemampuan untuk berkomunikasi secara efektif baik lisan maupun tulisan
8. Kemampuan merencanakan, menyelesaikan dan mengevaluasi tugas di dalam batasan-batasan yang ada
9. Mampu menunjukkan sikap peran serta dalam kelompok kerja multi disiplin dan lintas budaya
10. Mampu menunjukkan sikap bertanggung jawab yang sesuai dengan etika profesi

11. Kemampuan memahami kebutuhan akan pembelajaran sepanjang hayat termasuk akses terhadap isu-isu mutakhir di bidang telekomunikasi dan wawasan kewirausahaan

Tabel 1 Capaian Pembelajaran yang Terpetakan di Skill dan Attitude

CAPAIAN PEMBELAJARAN PROGRAM (PROGRAM LEARNING OUTCOME) PROGRAM STUDI : S1 TEKNIK TELEKOMUNIKASI	
SIKAP :	
PLO 1	Bertakwa kepada Tuhan Yang Maha Esa dan mampu menunjukan sikap religius
PLO 9	Mampu menunjukan sikap peran serta dalam kelompok kerja multi disiplin dan lintas budaya
PLO 10	Mampu menunjukan sikap bertanggung jawab yang sesuai dengan etika profesi
PENGETAHUAN :	
PLO 2	Mempunyai pengetahuan dan kemampuan untuk menggunakan ilmu dasar matematika, sains, dan rekayasa
PLO 11	Kemampuan memahami kebutuhan akan pembelajaran sepanjang hayat termasuk akses terhadap isu-isu mutakhir di bidang telekomunikasi dan wawasan kewirausahaan
KETERAMPILAN UMUM :	
PLO 4	Mempunyai kemampuan merancang dan melaksanakan eksperimen, termasuk menganalisis dan menginterpretasikan data secara ilmiah menggunakan metode ilmiah
PLO 7	Mempunyai kemampuan untuk berkomunikasi secara efektif baik lisan maupun tulisan
PLO 8	Kemampuan merencanakan, menyelesaikan dan mengevaluasi tugas di dalam batasan-batasan yang ada
KETERAMPILAN KHUSUS :	
PLO 3	Mempunyai kemampuan merancang suatu sistem, komponen, atau proses untuk memenuhi kebutuhan yang diharapkan dalam batasan-batasan realistis termasuk pengiriman konten *broadband* melalui metode rekayasa di bidang telekomunikasi
PLO 5	Mempunyai kemampuan untuk mengidentifikasi, memformulasi, dan menyelesaikan permasalahan rekayasa telekomunikasi
PLO 6	Mempunyai keterampilan dalam mengoperasikan perangkat keras, menggunakan aplikasi perangkat lunak dan kemampuan pemrograman yang berkaitan dengan teknologi informasi dan telekomunikasi

The formulation of the program learning outcomes are determined based on the graduate profile will be achieved. To achieve the rgraduates profile, capabilities of graduates are identified which refers to the international curriculum standards such as ABET, JABEE. The national regulation based on KKNI is considered to define the ability of graduates. The stakeholders demands and market trends as well the projections of future technology are also considered. The process can be described as follows:

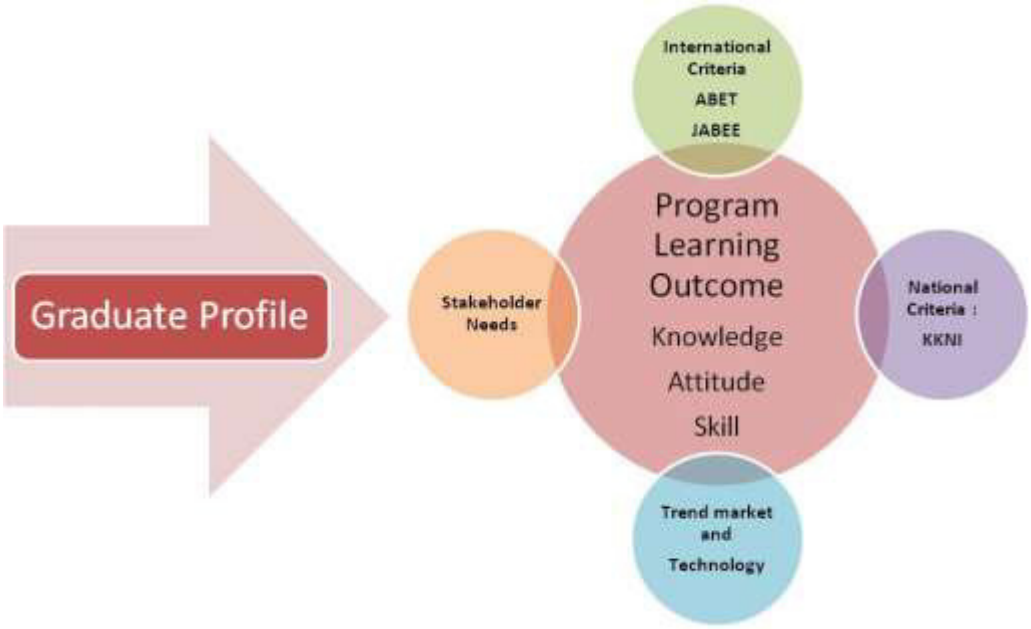


Figure 2 Determining Process of Program Learning Outcome

To achieve the graduates profile, program learning outcome is needed which are described as follow :

1. *Believe in the absoluteness of God and show a religious attitude*
2. *Has the ability to apply basic knowledge of mathematics, science, and engineering*
3. *Has the ability to design a system, component, or process to meet the expected needs set within a realistic scope, including the delivery of broadband content using engineering methods in the field of telecommunications*
4. *Has the ability to design and conduct experiments, including to analyze and interpret data using scientific methods*
5. *Has the ability to identify, formulate, and solve the telecommunication engineering problems*
6. *Has the ability to operate hardware and utilize software applications, as well as programming skills that relate to information technology and telecommunications*
7. *Has the ability to communicate effectively, both orally and in written communication*

8. *Has the ability to plan, execute, and evaluate assigned tasks according to the requirements*
9. *Has the ability to function on multidisciplinary and cross-cultural teams*
10. *Has the ability to be responsible according to the professional ethics*
11. *Has the ability to recognize the need for life-long learning, including the access into current issues in the field of telecommunication and entrepreneurial knowledge*

Table 1 Program Learning Outcome mappinginto Knowledge, Skill and Attitude

PROGRAM LEARNING OUTCOME ***PROGRAM : BACHELOR OF TELECOMMUNICATION ENGINEERING***	
ATTITUDE :	
PLO 1	*Believe in the absoluteness of God and show a religious attitude*
PLO 9	*Has the ability to function on multidisciplinary and cross-cultural teams*
PLO 10	*Has the ability to be responsible according to the professional ethics*
KNOWLEDGE :	
PLO 2	*Has the ability to apply basic knowledge of mathematics, science, and engineering*
PLO 11	*Has the ability to recognize the need for life-long learning, including the access into current issues in the field of telecommunication and entrepreneurial knowledge*
GENERAL SKILL :	
PLO 4	*Has the ability to design and conduct experiments, including to analyze and interpret data using scientific methods*
PLO 7	*Has the ability to communicate effectively, both orally and in written communication*
PLO 8	*Has the ability to plan, execute, and evaluate assigned tasks according to the requirements*
SPECIFIC SKILL :	
PLO 3	*Has the ability to design a system, component, or process to meet the expected needs set within a realistic scope, including the delivery of broadband content using engineering methods in the field of telecommunications*
PLO 5	*Has the ability to identify, formulate, and solve the telecommunication engineering problems*
PLO 6	*Has the ability to operate hardware and utilize software applications, as well as programming skills that relate to information technology and telecommunications*

4.1 Deskripsi Kemampuan Lulusan

4.1 Description of Graduates Ability

Kemampuan yang dimiliki setiap profil lulusan digambarkan pada tabel berikut :

Tabel 2 Profil Lulusan dan Deskripsinya

No	Profil Lulusan	Deskripsi Kemampuan Lulusan
1	Seorang Sarjana Teknik di bidang Telekomunikasi yang professional, kompeten, dan mandiri	Seorang tenaga professional yang mampu berkontribusi secara aktif pada kemajuan bidang telekomunikasi, berkompetisi di bidang teknologi informasi dan komputer, beradaptasi terhadap lingkungan baru, dan secara berkesinambungan mampu mengembangkan potensi dirinya

The ability of program graduates are described as follow :

Table 2 The Ability of Graduates Profile

No	*Graduate Profile*	*Description of Graduates Ability*
1	*A professional, competent, and autonomous Telecommunication engineer*	*A competent professional who is able to actively contribute to the advances in the field of telecommunication, compete in information and communication technology, adapt to the new environment, as well as continuously develop himself*

5 STRUKTUR KURIKULUM

6 STRUCTURE OF CURRICULUM

6.1 Struktur Kurikulum Program 4 Tahun

6.1 Structure of 4 Years Program

Untuk menyelesaikan Progam Sarjana, mahasiswa harus menyelesaikan 145 SKS. Mata kuliah pilihan yang diambil adalah :

To graduate from Telecommunication Engineering Program, student should finish 145 credits. The all courses would be taken are :

Semester 1			
No	**Kode**	**Nama**	**SKS**
1	MUH1B3	Kalkulus 1 B	3
2	FUH1A3	Fisika 1 A	3
3	FUH1B1	Praktikum Fisika 1 A	1
4	LUH1B2	Bahasa Inggris I	2
5	LUH1A2	Bahasa Indonesia	2
6	HUH1G3	Pancasila dan Kewarganegaraan	3
7	KUH1A3	Kimia	3
8	HUH1X2	Pendidikan Agama dan Etika	2
Jumlah SKS			19

1st Semester			
No	**Code**	**Name**	**Credit**
1	MUH1B3	Calculus 1 B	3
2	FUH1A3	Physics 1 A	3
3	FUH1B1	Physics 1 A Lab Works	1
4	LUH1B2	English I	2
5	LUH1A2	Indonesian Language	2
6	HUH1G3	Pancasila and Civics	3
7	KUH1A3	Chemistry	3
8	HUH1X2	Religions and Ethics	2
Total Credits			19

Semester 2			
No	**Kode**	**Nama**	**SKS**
1	MUH1B3	Kalkulus 2 B	3
2	FUH1D3	Fisika 2 A	3
3	FUH1E1	Praktikum Fisika 2A	1
4	FEH1J2	Konsep Pengenalan Sains dan Teknologi A	2
5	FEH1H3	Algoritma dan Pemrograman B	3

2nd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1B3	Calculus 2 B	3
2	FUH1D3	Physics 2 A	3
3	FUH1E1	Physics 2 A Lab Works	1
4	FEH1J2	Concept of Science and Technology Development A	2
5	FEH1H3	Algorithm and Programming B	3

6	FEH1I1	Praktikum Algoritma dan Pemrograman B	1
7	LUH2C2	Bahasa Inggris II	2
8	DUH1A2	Literasi TIK	2
9	TTH1A2	Pengenalan Teknik Telekomunikasi	2
Jumlah SKS			19

6	FEH1I1	Algorithm and Programming B Lab Works	1
7	LUH2C2	English II	2
8	DUH1A2	ICT Iteracy	2
9	TTH1A2	Introduction to Telecommunication Engineering	2
Total Credits			19

Semester 3			
No	**Kode**	**Nama**	**SKS**
1	MUH1G3	Matriks dan Ruang Vektor	3
2	FEH2J3	Matematika Diskrit B	3
3	FEH2H3	Aljabar Boolean dan Rangkaian Logika	3
4	TTH2A3	Jaringan dan Teknik Penyambungan Telekomunikasi	3
5	FEH2I3	Persamaan Diferensial dan Aplikasi	3
6	FEH2B4	Rangkaian Listrik	4
7	TTH2B1	Praktikum Teknik Telekomunikasi I	1
Jumlah SKS			20

3rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1G3	Matrices and Vector Spaces	3
2	FEH2J3	Discrete Mathematics B	3
3	FEH2H3	Boolean Algebra and Logic Circuits	3
4	TTH2A3	Telecommunications and Switching Networks	3
5	FEH2I3	Diferential Equation and Applications	3
6	FEH2B4	Electric Circuits	4
7	TTH2B1	Telecommunications Lab Works I	1
Total Credits			20

Semester 4			
No	**Kode**	**Nama**	**SKS**
1	MUH1F3	Probabilitas dan Statistika A	3
2	FEH2K3	Variabel Kompleks	3
3	FEH2F3	Elektromagnetika	3
4	FEH2L3	Pengolahan Sinyal Waktu Kontinyu	3

4rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1F3	Probability and Statistics A	3
2	FEH2K3	Complex variables	3
3	FEH2F3	Electromagnetics	3
4	FEH2L3	Continous-Time Signal Processing	3

5	TTH2D3	Mikroprosesor	3
6	FEH2G4	Elektronika	4
7	TTH2E1	Praktikum Teknik Telekomunikasi II	1
Jumlah SKS			20

5	TTH2D3	Microprocessor	3
6	FEH2G4	Electronics	4
7	TTH2E1	Telecommunications Lab Works II	1
Total Credits			20

Semester 5			
No	**Kode**	**Nama**	**SKS**
1	TTH3A4	Sistem Komunikasi	4
2	TTH3B3	Elektromagnetika Telekomunikasi	3
3	FEH3A3	Pengolahan Sinyal Waktu Diskrit	3
4	TTH3C3	Jaringan Komunikasi Data	3
5	TTH3D3	Pemrograman Berbasis Objek	3
6	DUH2A2	Kewirausahaan	2
7	TTH3E1	Praktikum Teknik Telekomunikasi III	1
Jumlah SKS			19

5st Semester			
No	**Code**	**Name**	**Credit**
1	TTH3A4	Communication Systems	4
2	TTH3B3	Electromagnetics for Telecommunications	3
3	FEH3A3	Discrete-Time Signal Processing	3
4	TTH3C3	Communication Data Networks	3
5	TTH3D3	Object-based Programming	3
6	DUH2A2	Entrepreneurship	2
7	TTH3E1	Telecommunication Lab Works III	1
Total Credits			19

Semester 6			
No	**Kode**	**Nama**	**SKS**
1	FEH2D2	Studium General	2
2	TTH3G3	Antena dan Propagasi	3
3	TTH3H3	Sistem Komunikasi Optik	3
4	TTH3I3	Elektronika Telekomunikasi	3
5	TTH3J3	Rekayasa Trafik	3
6	TTH3K3	Keamanan Jaringan	3
7	FEH2E2	Ekonomi Teknik B	2
8	TTH3F1	Praktikum Teknik Telekomunikasi IV	1
Jumlah SKS			20

6rd Semester			
No	**Code**	**Name**	**Credit**
1	FEH2D2	Studium General	2
2	TTH3G3	Antenna and Propagation	3
3	TTH3H3	Optic Communication Systems	3
4	TTH3I3	Communication Electronics	3
5	TTH3J3	Traffic Engineering	3
6	TTH3K3	Network Security	3
7	FEH2E2	Engineering Economics B	2
8	TTH3F1	Telecommunication Lab Works IV	1
Total Credits			20

Semester 7			
No	**Kode**	**Nama**	**SKS**
1		Mata Kuliah Pilihan 1	3
2		Mata Kuliah Pilihan 2	3
3	TTH4A3	Sistem Komunikasi Nirkabel	3
4		Mata Kuliah Pilihan 3	3
5	FEH4A2	Penulisan Karya Ilmiah dan Proposal	2
Jumlah SKS			14

7rd Semester			
No	**Code**	**Name**	**Credit**
1		The Elective Course 1	3
2		The Elective Course 2	3
3	TTH4A3	Wireless Communication Systems	3
4		The Elective Course	3
5	FEH4A2	Scientific and Proposal Writing	2
Total Credits			14

Semester 8			
No	**Kode**	**Nama**	**SKS**
1	FEH3C3	Manajemen Proyek	3
2		Mata Kuliah Pilihan 4	3
3	DUH2B2	Geladi *)	2
4	FEH3B2	Kerja Praktek *)	2
5	TTH4B4	Tugas Akhir	4
Jumlah SKS			14

8rd Semester			
No	**Code**	**Name**	**Credit**
1	FEH3C3	Project Management	3
2		The Elective Course 4	3
3	DUH2B2	Basic On Job Training*)	2
4	FEH3B2	Internship*)	2
5	FEH4B4	Final Project	4
Total Credits			14

Mata Kuliah Pilihan			
No	**Kode**	**Nama**	**SKS**
1	TTH4C3	Rekayasa jaringan	3
2	TTH4D3	New Generation Network	3
3	TTH4E3	Software Defined Network	3
4	TTH4F3	Jaringan Nirkabel	3

The Elective Courses			
No	**Code**	**Name**	**Credit**
1	TTH4C3	Network Engineering	3
2	TTH4D3	New Generation Network	3
3	TTH4E3	Software Defined Network	3
4	TTH4F3	Wireless Networks	3

5	TTH4G3	Model dan Simulasi Jaringan Komunikasi	3
6	TTH4H3	Komunikasi Nirkabel Pita Lebar	3
7	TTH4I3	Rekayasa Radio	3
8	TTH4J3	Sistem Komunikasi Satelit	3
9	TTH4K3	Radar, Navigasi dan Remote Sensing	3
10	TTH4L3	Komunikasi Optik Lanjut	3
11	TTH4M3	Aplikasi Bergerak	3
12	TTH4N3	Koding dan Kompresi	3
13	TTH4O3	Speech Processing	3
14	TTH4P3	Computer Vision	3
15	TTH4Q3	Steganografi and Watermarking	3

5	TTH4G3	Model and Simulation of Communication Networks	3
6	TTH4H3	Broadband Wireless Communications	3
7	TTH4I3	Radio Engineering	3
8	TTH4J3	Satellite Communication Systems	3
9	TTH4K3	Radar, Navigation and Remote Sensing	3
10	TTH4L3	Advanced Optic Communications	3
11	TTH4M3	Mobile Applications	3
12	TTH4N3	Coding and Compression	3
13	TTH4O3	Speech Processing	3
14	TTH4P3	Computer Vision	3
15	TTH4Q3	Steganography and watermarking	3

Mata Kuliah Agama			
No	**Kode**	**Nama**	**SKS**
1	HUH1A2	Pendidikan Agama Islam dan Etika	2
2	HUH1B2	Pendidikan Agama Kristen dan Etika	2
3	HUH1C2	Pendidikan Agama Katholik dan Etika	2
4	HUH1D2	Pendidikan Agama Hindu dan Etika	2
5	HUH1E2	Pendidikan Agama Budha dan Etika	2
6	HUH1F2	Pendidikan Agama Khong Hu Cu dan Etika	2

Religion Courses			
No	**Code**	**Name**	**Credit**
1	HUH1A2	Islam Religions and Ethics	2
2	HUH1B2	ChristianReligions and Ethics	2
3	HUH1C2	Catholic Religions and Ethics	2
4	HUH1D2	Hindu Religions and Ethics	2
5	HUH1E2	BuddhaReligions and Ethics	2
6	HUH1F2	Khong Hu CuReligions and Ethics	2

No	Mata Kuliah Praktikum	Kode	SKS
1	Praktikum Teknik Telekomunikasi I - Jaringan dan Teknik Penyambungan - Rangkaian Listrik	TTH2R1	1
2	Praktikum Teknik Telekomunikasi II - Mikroprosesor - Elektronika	TTH2E1	1
3	Praktikum Teknik Telekomunikasi III - Sistem Komunikasi - Elektromagnetika Telekomunikasi - Pengolahan Sinyal Waktu Diskrit - Jaringan Komunikasi Data	TTH3E1	1
4	Praktikum Teknik Telekomunikasi IV - Antena dan Propagasi - Sistem Komunikasi Optik - Elektronika Telekomunikasi - Keamanan Jaringan	TTH3F1	1

No	Lab Work Courses	Code	Credit
1	Laboratorium Lab Works I - Telecommunication and Swiching - Electric Circuits	TTH2R1	1
2	Laboratorium Lab Works II - Microprocessor - Electronics	TTH2E1	1
3	Laboratorium Lab Works III - Communication Systems - Electromagnetics for Telecommunications - Discrete Time Signal Processing - Communication Data Networks	TTH3E1	1
4	Laboratorium Lab Works IV - Antenna and Propagation - Optic Communication Systems - Communication Electronics - Network Security	TTH3F1	1

6.2 Struktur Kurikulum Program 3.5 Tahun

6.2 Structure of 3.5 Years Program

Semester 1			
No	**Kode**	**Nama**	**SKS**
1	MUH1B3	Kalkulus 1 B	3
2	FUH1A3	Fisika 1 A	3
3	FUH1B1	Praktikum Fisika 1 A	1
4	LUH1B2	Bahasa Inggris I	2
5	LUH1A2	Bahasa Indonesia	2
6	HUH1G3	Pancasila dan Kewarganegaraan	3
7	KUH1A3	Kimia	3
8	HUH1X2	Pendidikan Agama dan Etika	2
Jumlah SKS			19

1st Semester			
No	**Code**	**Name**	**Credit**
1	MUH1B3	Calculus 1 B	3
2	FUH1A3	Physics 1 A	3
3	FUH1B1	Physics 1 A Lab Works	1
4	LUH1B2	English I	1
5	LUH1A2	Indonesian Languange	2
6	HUH1G3	Pancasila and Civics	3
7	KUH1A3	Chemistry	3
8	HUH1X2	Religions and Ethics	2
Total Credits			19

Semester 2			
No	**Kode**	**Nama**	**SKS**
1	MUH1B3	Kalkulus 2 B	3
2	FUH1D3	Fisika 2A	3
3	FUH1E1	Praktikum Fisika 2A	1

2nd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1B3	Calculus 2 B	3
2	FUH1D3	Physics 2 A	3
3	FUH1E1	Physics 2 A Lab Works	1

4	FEH1J2	Konsep Pengenalan Sains dan Teknologi A	2
5	FEH1H3	Algoritma dan Pemrograman B	3
6	FEH1I1	Praktikum Algoritma dan Pemrograman B	1
7	LUH2C2	Bahasa Inggris II	2
8	DUH1A2	Literasi TIK	2
9	TTH1A2	Pengenalan Teknik Telekomunikasi	2
10	FEH2J3	Matematika Diskrit B	3
Jumlah SKS			22

4	FEH1J2	Concept of Science and Technology Development A	2
5	FEH1H3	Algorithm and Programming B	3
6	FEH1I1	Algorithm and Programming B Lab Works	1
7	LUH2C2	English II	2
8	DUH1A2	ICT Literacy	2
9	TTH1A3	Introduction to Telecommunication Engineering	2
10	FEH2J3	Discrete Mathematics B	3
Total Credits			22

Semester 3			
No	**Kode**	**Nama**	**SKS**
1	MUH1G3	Matriks dan Ruang Vektor	3
2	FEH2H3	Aljabar Boolean and rangkaian Logika	3
3	TTH2A3	Jaringan dan Teknik Penyambungan Telekomunikasi	3
4	FEH2I3	Persamaan Diferensial dan Aplikasi	3
5	FEH2B4	Rangkaian Listrik	4
6	TTH2B1	Praktikum Teknik Telekomunikasi I	1
7	TTH3D3	Pemrograman Berbasis Obyek	3
8	FEH2E2	Ekonomi Teknik B	2
Jumlah SKS			22

3rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1G3	Matrices and Vector Spaces	3
2	FEH2H3	Boolean Algebra and Logic Circuits	3
3	TTH2A3	Telecommunications and Switching Networks	3
4	FEH2I3	Diferential Equation and Applications	3
5	FEH2B4	Electric Circuits	4
6	TTH2B1	Telecommunications Lab Works I	1
7	TTH3D3	Object-based Programming	3
8	FEH2E2	Engineering Economics B	2
Total Credits			22

Semester 4			
No	**Kode**	**Nama**	**SKS**
1	MUH1F3	Probabilitas dan Statistika A	3
2	FEH2K3	Variabel Kompleks	3
3	FEH2F3	Elektromagnetika	3
4	FEH2L3	Pengolahan Sinyal Waktu Kontinyu	3
5	TTH2D3	Mikroprosesor	3
6	FEH2G4	Elektronika	4
7	TTH2E1	Praktikum Teknik Telekomunikasi II	1
8	TTH3C3	Jaringan dan Komunikasi Data	3
Jumlah SKS			23

4rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1F3	Probability and Statistic A	3
2	FEH2K3	Complex variable	3
3	FEH2F3	Electromagnetics	3
4	FEH2L3	Continous-Time Signal Processing	3
5	TTH2D3	Microprocessor	3
6	FEH2G4	Electronics	4
7	TTH2E1	Telecommunications Lab Works II	1
8	TTH3C3	Communication and Data Networks	3
Total Credits			23

Semester 5			
No	**Kode**	**Nama**	**SKS**
1	TTH3A4	Sistem Komunikasi	4
2	TTH3B3	Elektromagnetika Telekomunikasi	3
3	FEH3A3	Pengolahan Sinyal Waktu Diskrit	3
4	DUH2A2	Kewirausahaan	2
5	TTH3E1	Praktikum Teknik Telekomunikasi III	1
6	TTH3K3	Keamanan jaringan	3
7	TTH3J3	Rekayasa Trafik	3
8	FEH3C3	Manajemen Proyek	3
Jumlah SKS			22

5st Semester			
No	**Code**	**Name**	**Credit**
1	TTH3A4	Communication Systems	4
2	TTH3B3	Electromagnetics for Telecommunications	3
3	FEH3A3	Discrete-Time Signal Processing	3
4	DUH2A2	Entrepreneurship	2
5	TTH3E1	Telecommunications Lab Works III	1
6	TTH3K3	Network Security	3
7	TTH3J3	Traffic Engineering	3
8	FEH3C3	Project management	3
Total Credits			22

Semester 6			
No	**Kode**	**Nama**	**SKS**
1	FEH2D2	Studium Generale	2
2	TTH3G3	Antena dan Propagasi	3
3	TTH3H3	Sistem Komunikasi Optik	3

6rd Semester			
No	**Code**	**Name**	**Credit**
1	FEH2D2	Studium Generale	2
2	TTH3G3	Antenna and Propagation	3
3	TTH3H3	Optic Communication Systems	3

4	TTH3I3	Elektronika Telekomunikasi	3
5	FEH4A2	Penulisan Karya Ilmiah dan Proposal	2
6		Mata Kuliah Pilihan 1	3
7		Mata Kuliah Pilihan 2	3
8	TTH3F1	Praktikum Teknik Telekomunikasi IV	1
Jumlah SKS			20

4	TTH3I3	Telecommunication Electronics	3
5	FEH4A2	Scientific and Proposal Writing	2
6		The Elective Courses 1	3
7		The Elective Courses 2	3
8	TTH3F1	Telecommunications Lab Works IV	1
Total Credits			20

Semester 7			
No	**Kode**	**Nama**	**SKS**
1		Mata Kuliah Pilihan 3	3
2		Mata Kuliah Pilihan 4	3
3	DUH2B2	Geladi *)	2
4	FEH3B2	Kerja Praktek *)	2
5	TTH4A3	Sistem Komunikasi Nirkabel	3
6	FEH4B4	Tugas Akhir	4
Jumlah SKS			17

7rd Semester			
No	**Code**	**Name**	**Credit**
1		The Elective Course 3	3
2		The Elective Course 4	3
3	DUH2B2	Basic On Job Training	2
4	FEH3B2	Internship	2
5	TTH4A3	Wireless Communication Systems	3
6	FEH4B4	Final Project	4
Total Credits			17

Mata Kuliah Agama			
No	**Kode**	**Nama**	**SKS**
1	HUH1A2	Pendidikan Agama Islam dan Etika	2
2	HUH1B2	Pendidikan Agama Kristen dan Etika	2
3	HUH1C2	Pendidikan Agama Katholik dan Etika	2
4	HUH1D2	Pendidikan Agama Hindu dan Etika	2
5	HUH1E2	Pendidikan Agama Budha dan Etika	2
6	HUH1F2	Pendidikan Agama	2

Religion Courses			
No	**Code**	**Name**	**Credit**
1	HUH1A2	Islam Religions and Ethics	2
2	HUH1B2	ChristianReligions and Ethics	2
3	HUH1C2	Catholic Religions and Ethics	2
4	HUH1D2	Hindu Religions and Ethics	2
5	HUH1E2	BuddhaReligions and Ethics	2
6	HUH1F2	Khong Hu	2

		Khong Hu Cu dan Etika	

		CuReligions and Ethics	

No	Mata Kuliah Praktikum	Kode	SKS
1	Praktikum Teknik Telekomunikasi I - Jaringan dan Teknik Penyambungan - Rangkaian Listrik	TTH2B1	1
2	Praktikum Teknik Telekomunikasi II - Mikroprosesor - Elektronika	TTH2E1	1
3	Praktikum Teknik Telekomunikasi III - Sistem Komunikasi - Elektromagnetika Telekomunikasi - Pengolahan Sinyal Waktu Diskrit - Jaringan Komunikasi Data	TTH3E1	1
4	Praktikum Teknik Telekomunikasi IV - Antena dan Propagasi - Sistem Komunikasi Optik - Elektronika Telekomunikasi - Keamanan Jaringan	TTH3F1	1

No	Lab Work Courses	Code	Credit
1	Laboratorium Lab Works I - Telecommunication and Swiching - Electric Circuits	TTH2B1	1
2	Laboratorium Lab Works II - Microprocessor - Electronics	TTH2E1	1
3	Laboratorium Lab Works III - Communication Systems - Electromagnetics for Telecommunications - Discrete Time Signal Processing - Communication Data Networks	TTH3E1	1
4	Laboratorium Lab Works IV - Antenna and Propagation - Optic Communication Systems - Communication Electronics - Network Security	TTH3F1	1

6.3 Struktur Kurikulum Program Kelas Internasional

6.3 Struktur of curriculum of International Class Program

Untuk menyelesaikan Progam Sarjana, mahasiswa harus menyelesaikan 145 SKS. Mata kuliah pilihan yang diambil adalah :

To graduate from Telecommunication Engineering Program, student should finish 145 credits. The all courses would be taken are :

Semester 1			
No	**Kode**	**Nama**	**SKS**
1	MUH1B3	Kalkulus 1 B	3
2	FUH1A3	Fisika 1 A	3
3	FUH1B1	Praktikum Fisika 1 A	1
4	LUH1B2	Bahasa Inggris I	2
5	LUH1A2	Bahasa Indonesia	2
6	HUH1G3	Pancasila dan Kewarganegaraan	3
7	KUH1A3	Kimia	3
8	HUH1X2	Pendidikan Agama dan Etika	2
Jumlah SKS			19

1st Semester			
No	**Code**	**Name**	**Credit**
1	MUH1B3	Calculus 1 B	3
2	FUH1A3	Physics 1 A	3
3	FUH1B1	Physics 1 A Lab Works	1
4	LUH1B2	English I	2
5	LUH1A2	Indonesian Language	2
6	HUH1G3	Pancasila and Civics	3
7	KUH1A3	Chemistry	3
8	HUH1X2	Religions and Ethics	2
Total Credits			19

Semester 2			
No	**Kode**	**Nama**	**SKS**
1	MUH1E3	Kalkulus 2 B	3
2	FUH1D3	Fisika 2 A	3
3	FUH1E1	Praktikum Fisika 2A	1
4	FEH1J2	Konsep Pengenalan Sains dan Teknologi A	2
5	FEH1H3	Algoritma dan Pemrograman B	3
6	FEH1I1	Praktikum Algoritma dan Pemrograman B	1
7	LUH2C2	Bahasa Inggris II	2
8	DUH1A2	Literasi TIK	2
9	TTH1A2	Pengenalan Teknik Telekomunikasi	2
Jumlah SKS			19

2nd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1E3	Calculus 2 B	3
2	FUH1D3	Physics 2 A	3
3	FUH1E1	Physics 2 A Lab Works	1
4	FEH1J2	Concept of Science and Technology Development A	2
5	FEH1H3	Algorithm and Programming B	3
6	FEH1I1	Algorithm and Programming B Lab Works	1
7	LUH2C2	English II	2
8	DUH1A2	ICT Iteracy	2
9	TTH1A2	Introduction to Telecommunication Engineering	2
Total Credits			19

Semester Padat			
No	**Kode**	**Nama**	**SKS**
1	FEH2D2	Studium General	2
2	FEH2J3	Matematika Diskrit B	3
3	FEH2K3	Variabel Kompleks	3
Jumlah SKS			8

Compact Semester			
No	**Code**	**Name**	**Credit**
1	FEH2D2	Studium General	2
2	FEH2J3	Discrete Mathematics B	3
3	FEH2K3	Complex variables	3
Total Credits			8

Semester 3			
No	**Kode**	**Nama**	**SKS**
1	MUH1G3	Matriks dan Ruang Vektor	3
2	FEH2H3	Aljabar Boolean dan Rangkaian Logika	3
3	TTH2A3	Jaringan dan	3

3rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1G3	Matrices and Vector Spaces	3
2	FEH2H3	Boolean Algebra and Logic Circuits	3
3	TTH2A3	Telecommunications	3

		Teknik Penyambungan Telekomunikasi	
4	FEH2I3	Persamaan Diferensial dan Aplikasi	3
5	FEH2B4	Rangkaian Listrik	4
6	TTH2B1	Praktikum Teknik Telekomunikasi I	1
7	FEH2F3	Elektromagnetika	3
Jumlah SKS			20

		and Switching Networks	
4	FEH2I3	Diferential Equation and Applications	3
5	FEH2B4	Electric Circuits	4
6	TTH2B1	Telecommunications Lab Works I	1
7	FEH2F3	Electromagnetics	3
Total Credits			20

Semester 4			
No	**Kode**	**Nama**	**SKS**
1	MUH1F3	Probabilitas dan Statistik	3
2	FEH2L3	Pengolahan Sinyal Waktu Kontinyu	3
3	TTH2D3	Mikroprosesor	3
4	FEH2G4	Elektronika	4
5	TTH2E1	Praktikum Teknik Telekomunikasi II	1
6	TTH3B3	Elektromagnetika Telekomunikasi	3
7	DUH2A2	Kewirausahaan	2
8	DUH2B2	Geladi *)	2
Jumlah SKS			21

4rd Semester			
No	**Code**	**Name**	**Credit**
1	MUH1F3	Probability and Statistics	3
2	FEH2L3	Continous-Time Signal Processing	3
3	TTH2D3	Microprocessor	3
4	FEH2G4	Electronics	4
5	TTH2E1	Telecommunications Lab Works II	1
6	TTH3B3	Electromagnetics for Telecommunications	3
7	DUH2A2	Entrepreneurship	2
8	DUH2B2	Basic On Job Training*)	2
Total Credits			21

Semester 5			
No	**Kode**	**Nama**	**SKS**
1	TTH3A4	Sistem Komunikasi	4
2	FEH3A3	Pengolahan Sinyal Waktu Diskrit	3
3	TTH3C3	Jaringan Komunikasi Data	3
4	TTH3D3	Pemrograman Berbasis Objek	3
5	FEH3C3	Manajemen Proyek	3

5st Semester			
No	**Code**	**Name**	**Credit**
1	TTH3A4	Communication Systems	4
2	FEH3A3	Discrete-Time Signal Processing	3
3	TTH3C3	Communication Data Networks	3
4	TTH3D3	Object-based Programming	3
5	FEH3C3	Project Management	3

6	TTH3E1	Praktikum Teknik Telekomunikasi III	1
7	TTH3G3	Antena dan Propagasi	3
Jumlah SKS			19

6	TTH3E1	Telecommunication Lab Works III	1
7	TTH3G3	Antenna and Propagation	3
Total Credits			19

Semester 6			
No	**Kode**	**Nama**	**SKS**
1	TTH3H3	Sistem Komunikasi Optik	3
2	TTH3I3	Elektronika Telekomunikasi	3
3	TTH3J3	Rekayasa Trafik	3
4	TTH3K3	Keamanan Jaringan	3
5	FEH2E2	Ekonomi Teknik B	2
6	TTH3F1	Praktikum Teknik Telekomunikasi IV	1
7	FEH4A2	Penulisan Karya Ilmiah dan Proposal	2
8		Mata Kuliah Pilihan 1	3
9	FEH3B2	Kerja Praktek *)	2
Jumlah SKS			20

6rd Semester			
No	**Code**	**Name**	**Credit**
1	TTH3H3	Optic Communication Systems	3
2	TTH3I3	Communication Electronics	3
3	TTH3J3	Traffic Engineering	3
4	TTH3K3	Network Security	3
5	FEH2E2	Engineering Economics B	2
6	TTH3F1	Telecommunication Lab Works IV	1
7	FEH4A2	Scientific and Proposal Writing	2
8		The Elective Course 1	3
9	FEH3B2	Internship*)	2
Total Credits			20

Semester 7			
No	**Kode**	**Nama**	**SKS**
1	TTH4A3	Sistem Komunikasi Nirkabel	3
2		Mata Kuliah Pilihan 2	3
3		Mata Kuliah Pilihan 3	3
4		Mata Kuliah Pilihan 4	3
5	TTH4B4	Tugas Akhir	4

7rd Semester			
No	**Code**	**Name**	**Credit**
1	TTH4A3	Wireless Communication Systems	3
2		The Elective Course 2	3
3		The elective Course 3	3
4		The Elective Course 4	3
5	FEH4B4	Final Project	4

Jumlah SKS	16

Total Credits	16

Mata Kuliah Agama			
No	**Kode**	**Nama**	**SKS**
1	HUH1A2	Pendidikan Agama Islam dan Etika	2
2	HUH1B2	Pendidikan Agama Kristen dan Etika	2
3	HUH1C2	Pendidikan Agama Katholik dan Etika	2
4	HUH1D2	Pendidikan Agama Hindu dan Etika	2
5	HUH1E2	Pendidikan Agama Budha dan Etika	2
6	HUH1F2	Pendidikan Agama Khong Hu Cu dan Etika	2

Religion Courses			
No	**Code**	**Name**	**Credit**
1	HUH1A2	Islam Religions and Ethics	2
2	HUH1B2	ChristianReligions and Ethics	2
3	HUH1C2	Catholic Religions and Ethics	2
4	HUH1D2	Hindu Religions and Ethics	2
5	HUH1E2	BuddhaReligions and Ethics	2
6	HUH1F2	Khong Hu CuReligions and Ethics	2

No	Mata Kuliah Praktikum	Kode	SKS
1	Praktikum Teknik Telekomunikasi I - Jaringan dan Teknik Penyambungan - Rangkaian Listrik	TTH2R1	1
2	Praktikum Teknik Telekomunikasi II - Mikroprosesor - Elektronika	TTH2E1	1
3	Praktikum Teknik Telekomunikasi III - Sistem Komunikasi - Elektromagnetika Telekomunikasi - Pengolahan Sinyal Waktu Diskrit - Jaringan Komunikasi Data	TTH3E1	1
4	Praktikum Teknik Telekomunikasi IV - Antena dan Propagasi - Sistem Komunikasi Optik - Elektronika Telekomunikasi - Keamanan Jaringan	TTH3F1	1

No	Lab Work Courses	Code	Credit
1	Laboratorium Lab Works I - Telecommunication and Swiching - Electric Circuits	TTH2R1	1
2	Laboratorium Lab Works II - Microprocessor - Electronics	TTH2E1	1
3	Laboratorium Lab Works III - Communication Systems - Electromagnetics for Telecommunications - Discrete Time Signal Processing - Communication Data Networks	TTH3E1	1
4	Laboratorium Lab Works IV - Antenna and Propagation - Optic Communication Systems - Communication Electronics - Network Security	TTH3F1	1

6.4 Struktur Kurikulum Program Pindahan Diploma Ke Sarjana 2 Tahun

6.4 Struktur of curriculum of 2 Years Diploma To Bachelor TransferProgram

Untuk menyelesaikan program ini, mahasiswa harus menyelesaikan 67 SKS setelah melalui proses ekivalensi mata kuliah terhadap jenjang diploma sebelumnya.

To finish this program, student should finish 67 credits. There would be course equivalence process from previous diploma program.

Semester 1			
No	**Kode**	**Nama**	**SKS**
1	MUH1G3	Matriks dan Ruang Vektor	3
2	FEH2J3	Matematika Diskrit B	3
3	FEH2A3	Probabilitas dan Statistik	3
4	FEH2K3	Variabel Kompleks	3
5	FEH2L3	Pengolahan Sinyal Waktu Kontinyu	3
6	TTH3B3	Elektromagnetika Telekomunikasi	3
7	TTH3E1	Praktikum Teknik Telekomunikasi III	1
Jumlah SKS			19

1st Semester			
No	**Code**	**Name**	**Credit**
1	MUH1G3	Matrices and Vector Spaces	3
2	FEH2J3	Discret Mathematics B	3
3	FEH2A3	Probability and Statistics	3
4	FEH2K3	Complex variables	3
5	FEH2L3	Continous-Time Signal Processing	3
6	TTH3B3	Electromagnetics for Telecommunications	3
7	TTH3E1	Telecommunications Lab Works III	1
Total Credits			19

Semester 2			
No	**Kode**	**Nama**	**SKS**
1	TTH3A4	Sistem Komunikasi	4
2	FEH3A3	Pengolahan Sinyal Waktu Diskrit	3
3	TTH3G3	Antena dan Propagasi	3
4	TTH3J3	Rekayasa Trafik	3
5	TTH3H3	Sistem Komunikasi Optik	3
6	TTH3K3	Keamanan jaringan	3
7	TTH3F1	Praktikum Teknik Telekomunikasi IV	1
Jumlah SKS			20

2nd Semester			
No	**Code**	**Name**	**Credit**
1	TTH3A4	Communication Systems	4
2	FEH3A3	Discrete-Time Signal Processing	3
3	TTH3G3	Antenna and Propagation	3
4	TTH3J3	Traffic Engineering	3
5	TTH3H3	Optic Communication Systems	3
6	TTH3K3	Network Security	3
7	TTH3F1	Telecommunications Lab Works IV	1
Total Credits			20

Semester 3			
No	**Kode**	**Nama**	**SKS**
1	FEH2E2	Ekonomi Teknik B	2
2	TTH3D3	Pemrograman Berbasis Object	3
3	DUH2A2	Kewirausahaan	2
4		Mata Kuliah Pilihan 1	3
5		Mata Kuliah Pilihan 2	3
6	FEH4A2	Penulisan Karya Ilmiah dan Proposal	2
Jumlah SKS			15

3rd Semester			
No	**Code**	**Name**	**Credit**
1	FEH2E2	Engineering Economics B	2
2	TTH3D3	Object-based Programming	3
3	DUH2A2	Entrepreneurship	2
4		The Elective Course 1	3
5		The Elective Course 2	3
6	FEH4A2	Scientific and Proposal Writing	2
Total Credits			15

Semester 4			
No	**Kode**	**Nama**	**SKS**
1	FEH3C3	Manajemen Proyek	3
2		Mata Kuliah Pilihan 3	3
3		Mata Kuliah Pilihan 4	3
4	FEH4B4	Tugas Akhir	4
Jumlah SKS			13

4rd Semester			
No	**Code**	**Name**	**Credit**
1	FEH3C3	Project Management	3
2		The Elective Course 3	3
3		The Elective Course 4	3
4	FEH4B4	Final Project	4
Total Credits			13

No	Mata Kuliah Praktikum	Kode	SKS
1	Praktikum Teknik Telekomunikasi I - Jaringan dan Teknik Penyambungan - Rangkaian Listrik	TTH2B1	1
2	Praktikum Teknik Telekomunikasi II - Mikroprosesor - Elektronika	TTH2E1	1
3	Praktikum Teknik Telekomunikasi III - Sistem Komunikasi - Elektromagnetika Telekomunikasi - Pengolahan Sinyal Waktu Diskrit - Jaringan Komunikasi Data	TTH3E1	1
4	Praktikum Teknik Telekomunikasi IV - Antena dan Propagasi - Sistem Komunikasi Optik - Elektronika Telekomunikasi - Keamanan Jaringan	TTH3F1	1

No	Lab Work Courses	Code	Credit
1	Laboratorium Lab Works I - Telecommunication and Switching - Electric Circuits	TTH2B1	1
2	Laboratorium Lab Works II - Microprocessor - Electronics	TTH2E1	1
3	Laboratorium Lab Works III - Communication Systems - Electromagnetics for Telecommunications - Discrete Time Signal Processing - Communication Data Networks	TTH3E1	1
4	Laboratorium Lab Works IV - Antenna and Propagation - Optic Communication Systems - Communication Electronics - Network Security	TTH3F1	1

6.5 Struktur Kurikulum Program Pindahan Diploma Ke Sarjana 1.5 Tahun

6.5 Struktur of curriculum of 1.5 Years Diploma To Bachelor Transfer Program

Semester 1			
No	**Kode**	**Nama**	**SKS**
1	MUH1G3	Matriks dan Ruang Vektor	3
2	FEH2A3	Probabilitas dan Statistik	3
3	FEH2K3	Variabel Kompleks	3
4	FEH2L3	Pengolahan Sinyal Waktu Kontinyu	3
5	TTH3B3	Elektromagnetika Telekomunikasi	3
6	TTH3E1	Praktikum Teknik Telekomunikasi III	1
7	FEH2J3	Matematika Diskrit B	3
Jumlah SKS			19

1st Semester			
No	**Code**	**Name**	**Credit**
1	MUH1G3	Matrices and Vector Spaces	3
2	FEH2A3	Probability and Statistics	3
3	FEH2K3	Complex variables	3
4	FEH2L3	Continous-Time Signal Processing	3
5	TTH3B3	Electromagnetics for Telecommunications	3
6	TTH3E1	Telecommunications Lab Works III	1
7	FEH2J3	Discrete Mathematics B	3
Total Credits			19

Semester 2			
No	**Kode**	**Nama**	**SKS**
1	FEH2E2	Ekonomi Teknik B	2
2	FEH3A3	Pengolahan Sinyal Waktu Diskrit	3
3	TTH3G3	Antena dan Propagasi	3
4	TTH3J3	Rekayasa Trafik	3
5	TTH3H3	Sistem Komunikasi Optik	3
6	TTH3K3	Keamanan jaringan	3
7	TTH3L1	Praktikum Teknik Telekomunikasi IV	1
8	TTH3A4	Sistem	4

2nd Semester			
No	**Code**	**Name**	**Credit**
1	FEH2E2	Engineeering Economics B	2
2	FEH3A3	Discrete-Time Signal Processing	3
3	TTH3G3	Antenna and Propagation	3
4	TTH3J3	Traffic Engineering	3
5	TTH3H3	Optic Communication Systems	3
6	TTH3K3	Network Security	3
7	TTH3F1	Telecommunications Lab Works IV	1
8	TTH3A4	Communication	4

		Komunikasi	
9	FEH4A2	Penulisan Karya Ilmiah dan Proposal	2
Jumlah SKS			24

		Systems	
9	FEH4A2	Scientific and Proposal Writing	2
Total Credits			24

Semester 3			
No	**Kode**	**Nama**	**SKS**
1	TTH3D3	Pemrograman Berbasis Obyek	3
2	FEH3C3	Manajemen Proyek	3
3		Mata Kuliah Pilihan 1	3
4		Mata Kuliah Pilihan 2	3
5	DUH2A2	Kewirausahaan	2
6		Mata Kuliah Pilihan 3	3
7		Mata Kuliah Pilihan 4	3
8	FEH4B4	Tugas Akhir	4
Jumlah SKS			24

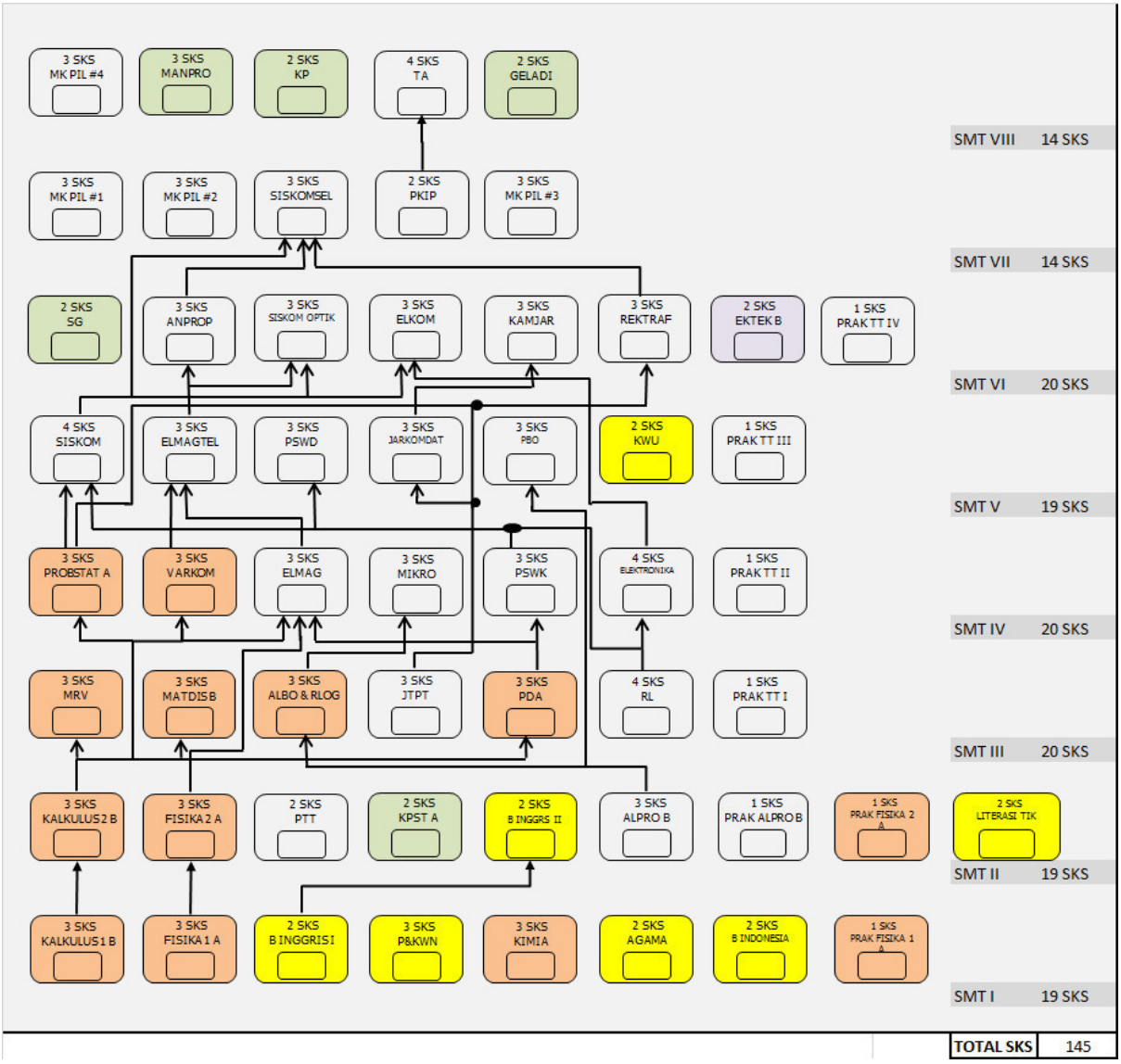
3rd Semester			
No	**Code**	**Name**	**Credit**
1	TTH3D3	Object-based Programming	3
2	FEH3C3	Project Management	3
3		The Elective Course 1	3
4		The Elective Course 2	3
5	DUH2A2	Entrepreneurship	2
6		The Elective Course 3	3
7		The Elective Course 4	3
8	FEH4B4	Final Project	4
Total Credits			24

No	Mata Kuliah Praktikum	Kode	SKS
1	Praktikum Teknik Telekomunikasi I - Jaringan dan Teknik Penyambungan - Rangkaian Listrik	TTH2B1	1
2	Praktikum Teknik Telekomunikasi II - Mikroprosesor - Elektronika	TTH2E1	1
3	Praktikum Teknik Telekomunikasi III - Sistem Komunikasi - Elektromagnetika Telekomunikasi - Pengolahan Sinyal Waktu Diskrit - Jaringan Komunikasi Data	TTH3E1	1
4	Praktikum Teknik Telekomunikasi IV - Antena dan Propagasi - Sistem Komunikasi Optik - Elektronika Telekomunikasi - Keamanan Jaringan	TTH3F1	1

No	Lab Work Courses	Code	Credit
1	Laboratorium Lab Works I - Telecommunication and Switching - Electric Circuits	TTH2B1	1
2	Laboratorium Lab Works II - Microprocessor - Electronics	TTH2E1	1
3	Laboratorium Lab Works III - Communication Systems - Electromagnetics for Telecommunications - Discrete Time Signal Processing - Communication Data Networks	TTH3E1	1
4	Laboratorium Lab Works IV - Antenna and Propagation - Optic Communication Systems - Communication Electronics - Network Security	TTH3F1	1

7 DIAGRAM RELASI KULIAH

7 *ORGANIGRAM OF COURSE*



Gambar 3 Diagram Relasi Kuliah

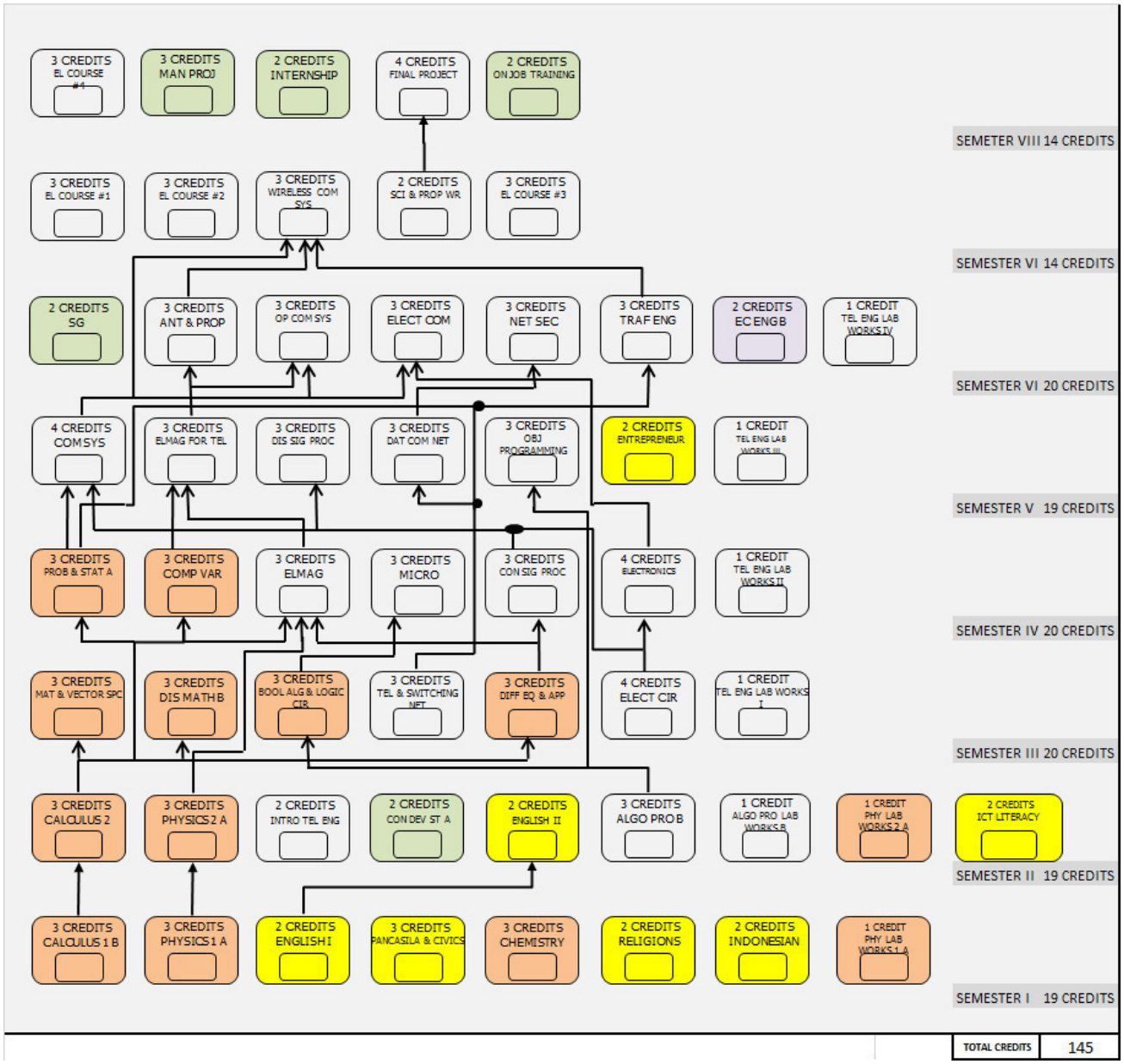


Figure 3 Organigram of Course

8 EKIVALENSI DENGAN KURIKULUM SEBELUMNYA

8 PREVIOUS CURRICULUM EQUIVALENCE

8.1 Ekivalensi Mata Kuliah

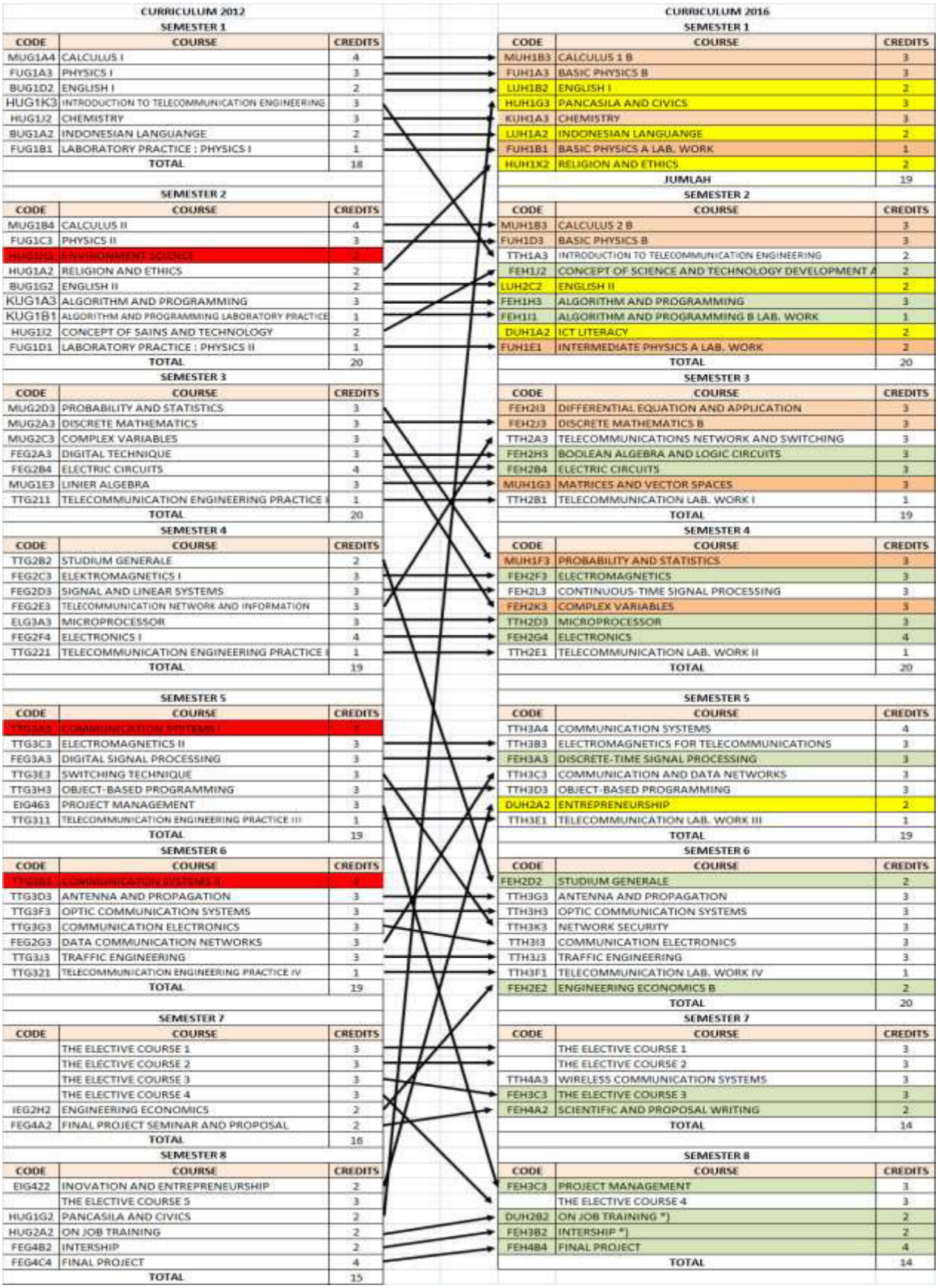
8.1 Course Equivalence

Tabel 3 Ekivalensi Mata Kuliah

KURIKULUM 2012		
SEMESTER 1		
KODE	MATA KULIAH	SKS
MUG1A4	KALKULUS I	4
FUG1A3	FISIKA I	3
BUG1D2	BAHASA INGGRIS I	2
HUG1K3	PENGENALAN TEKNIK TELEKOMUNIKASI	3
HUG1J2	KIMIA	3
BUG1A2	BAHASA INDONESIA	2
FUG1B1	PRAKTIKUM FISIKA I	1
JUMLAH		18
SEMESTER 2		
KODE	MATA KULIAH	SKS
MUG1B4	KALKULUS II	4
FUG1C3	FISIKA II	3
[illegible]	[illegible]	2
HUG1A2	PENDIDIKAN AGAMA DAN ETIKA	2
BUG1G2	BAHASA INGGRIS II	2
KUG1A3	ALGORITMA DAN PEMROGRAMAN	3
KUG1B1	PRAKTIKUM ALGORITMA DAN PEMROGRAMAN	1
HUG1I2	KONSEP PENGEMBANGAN SAINS DAN TEKNOLO	2
FUG1D1	PRAKTIKUM FISIKA II	1
JUMLAH		20
SEMESTER 3		
KODE	MATA KULIAH	SKS
MUG2D3	PROBABILITAS DAN STATISTIK	3
MUG2A3	MATEMATIKA DISKRIT	3
MUG2C3	VARIABEL KOMPLEKS	3
FEG2A3	TEKNIK DIGITAL	3
FEG2B4	RANGKAIAN LISTRIK	4
MUG1E3	ALJABAR LINIER	3
TTG211	PRAKTIKUM TEKNIK TELEKOMUNIKASI I	1
JUMLAH		20
SEMESTER 4		
KODE	MATA KULIAH	SKS
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETIKA I	3
FEG2D3	SINYAL DAN SISTEM LINIER	3
FEG2E3	JARINGAN TELEKOMUNIKASI DAN INFORMASI	3
ELG3A3	MIKROPROSESSOR	3
FEG2F4	ELEKTRONIKA I	4
TTG221	PRAKTIKUM TEKNIK TELEKOMUNIKASI II	1
JUMLAH		19
SEMESTER 5		
KODE	MATA KULIAH	SKS
[illegible]	[illegible]	3
TTG3C3	ELEKTROMAGNETIKA II	3
FEG3A3	PENGOLAHAN SINYAL DIGITAL	3
TTG3E3	TEKNIK SWITCHING	3
TTG3H3	PEMROGRAMAN BERBASIS OBJEK	3
EIG463	MANAJEMEN PROYEK	3
TTG311	PRAKTIKUM TEKNIK TELEKOMUNIKASI III	1
JUMLAH		19
SEMESTER 6		
KODE	MATA KULIAH	SKS
[illegible]	[illegible]	3
TTG3D5	ANTENA DAN PROPAGASI	3
TTG3F3	SISTEM KOMUNIKASI OPTIK	3
TTG3G3	ELEKTRONIKA TELEKOMUNIKASI	3
FEG2G3	JARINGAN KOMUNIKASI DATA	3
TTG3J3	REKAYASA TRAFIK	3
TTG321	PRAKTIKUM TEKNIK TELEKOMUNIKASI IV	1
JUMLAH		19
SEMESTER 7		
KODE	MATA KULIAH	SKS
	MATA KULIAH PILIHAN TT#1	3
	MATA KULIAH PILIHAN TT#2	3
	MATA KULIAH PILIHAN TT#3	3
	MATA KULIAH PILIHAN TT#4	3
IEG2H2	EKONOMI TEKNIK	2
FEG4A2	PROPOSAL TUGAS AKHIR DAN SEMINAR	2
JUMLAH		16
SEMESTER 8		
KODE	MATA KULIAH	SKS
EIG422	INOVASI DAN KEWIRAUSAHAAN	2
	MATA KULIAH PILIHAN #5	3
HUG1G2	PANCASILA DAN KEWARGANEGARAAN	2
HUG2A2	GELADI	2
FEG4B2	KERJA PRAKTEK	2
FEG4C4	TUGAS AKHIR	4
JUMLAH		15

KURIKULUM 2016		
SEMESTER 1		
KODE	MATA KULIAH	SKS
MUH1B3	KALKULUS IB	3
FUH1A3	FISIKA DASAR A	3
LUH1B2	BAHASA INGGRIS I	2
HUH1G3	PANCASILA DAN KEWARGANEGARAAN	3
KUH1A3	KIMIA	3
LUH1A2	BAHASA INDONESIA	2
FUH1B1	PRAKTIKUM FISIKA DASAR A	1
HUH1X2	PENDIDIKAN AGAMA DAN ETIKA	2
JUMLAH		19
SEMESTER 2		
KODE	MATA KULIAH	SKS
MUH1B3	KALKULUS IIB	3
FUH1D3	FISIKA LANJUT A	3
TTH1A3	PENGENALAN TEKNIK TELEKOMUNIKASI	2
FEH1J2	KONSEP PENGENALAN SAINS DAN TEKNOLOGI A	2
LUH2C2	BAHASA INGGRIS II	2
FEH1H3	ALGORITMA DAN PEMROGRAMAN B	3
FEH1I1	PRAKTIKUM ALGORITMA DAN PEMROGRAMAN B	1
DUH1A2	LITERASI TIK	2
FUH1E1	PRAKTIKUM FISIKA LANJUT A	1
JUMLAH		19
SEMESTER 3		
KODE	MATA KULIAH	SKS
FEH2I3	PERSAMAAN DIFERENSIAL DAN APLIKASI	3
FEH2J3	MATEMATIKA DISKRIT B	3
TTH2A3	JARINGAN DAN TEKNIK PENYAMBUNGAN TELEKOMUNIKA	3
FEH2H3	ALJABAR BOOLEAN DAN RANGKAIAN LOGIKA	3
FEH2B4	RANGKAIAN LISTRIK	4
MUH1D3	MATRIKS DAN RUANG VEKTOR	3
TTH2B1	PRAKTIKUM TEKNIK TELEKOMUNIKASI I (RANGK LOG-JTPT	1
JUMLAH		20
SEMESTER 4		
KODE	MATA KULIAH	SKS
MUH1F3	PROBABILITAS DAN STATISTIK	3
FEH2F3	ELEKTROMAGNETIKA	3
FEH2L3	PENGOLAHAN SINYAL WAKTU KONTINYU	3
FEH2K3	VARIABEL KOMPLEKS	3
TTH2D3	MIKROPROSESOR	3
FEH2G4	ELEKTRONIKA	4
TTH2E1	PRAKTIKUM TEKNIK TELEKOMUNIKASI II (MIKRO-ELKA)	1
JUMLAH		20
SEMESTER 5		
KODE	MATA KULIAH	SKS
TTH3A4	SISTEM KOMUNIKASI	4
TTH3B3	ELEKTROMAGNETIKA TELEKOMUNIKASI	3
FEH3A3	PENGOLAHAN SINYAL WAKTU DISKRIT	3
TTH3C3	JARINGAN KOMUNIKASI DAN DATA	3
TTH3D3	PEMROGRAMAN BERBASIS OBJEK	3
DUH2A2	KEWIRAUSAHAAN	2
TTH3E1	PRAKTIKUM TEKNIK TELEKOMUNIKASI III (SISKOM-ELMAG	1
JUMLAH		19
SEMESTER 6		
KODE	MATA KULIAH	SKS
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENA DAN PROPAGASI	3
TTH3H3	SISTEM KOMUNIKASI OPTIK	3
TTH3K3	KEAMANAN JARINGAN	3
TTH3I3	ELEKTRONIKA TELEKOMUNIKASI	3
TTH3J3	REKAYASA TRAFIK	3
TTH3F1	PRAKTIKUM TEKNIK TELEKOMUNIKASI IV (ANPROP-SKO-E	1
FEH2E2	EKONOMI TEKNIK B	2
JUMLAH		20
SEMESTER 7		
KODE	MATA KULIAH	SKS
	MATA KULIAH PILIHAN TT#1	3
	MATA KULIAH PILIHAN TT#2	3
TTH4A3	SISTEM KOMUNIKASI NIRKABEL	3
	MATA KULIAH PILIHAN #3	3
FEH4A2	PENYUSUNAN KARYA ILMIAH DAN PROPOSAL	2
JUMLAH		14
SEMESTER 8		
KODE	MATA KULIAH	SKS
FEH3C3	MANAJEMEN PROYEK	3
	MATA KULIAH PILIHAN #4	3
DUH2B2	GELADI *)	2
FEH3B3	KERJA PRAKTEK *)	2
FEH4B4	TUGAS AKHIR	4
JUMLAH		14
JUMLAH SKS TOTAL KURIKULUM 2016		145

Table 3 Course Equivalence



CURRICULUM 2012

SEMESTER 1

CODE	COURSE	CREDITS
MUG1A4	CALCULUS I	4
FUG1A3	PHYSICS I	3
BUG1D2	ENGLISH I	2
HUG1K3	INTRODUCTION TO TELECOMMUNICATION ENGINEERING	3
HUG1J2	CHEMISTRY	3
BUG1A2	INDONESIAN LANGUANGE	2
FUG1B1	LABORATORY PRACTICE : PHYSICS I	1
TOTAL		18

SEMESTER 2

CODE	COURSE	CREDITS
MUG1B4	CALCULUS II	4
FUG1C3	PHYSICS II	3
HUG1D1	ENVIRONMENT SCIENCE	2
HUG1A2	RELIGION AND ETHICS	2
BUG1G2	ENGLISH II	2
KUG1A3	ALGORITHM AND PROGRAMMING	3
KUG1B1	ALGORITHM AND PROGRAMMING LABORATORY PRACTICE	1
HUG1I2	CONCEPT OF SAINS AND TECHNOLOGY	2
FUG1D1	LABORATORY PRACTICE : PHYSICS II	1
TOTAL		20

SEMESTER 3

CODE	COURSE	CREDITS
MUG2D3	PROBABILITY AND STATISTICS	3
MUG2A3	DISCRETE MATHEMATICS	3
MUG2C3	COMPLEX VARIABLES	3
FEG2A3	DIGITAL TECHNIQUE	3
FEG2B4	ELECTRIC CIRCUITS	4
MUG1E3	LINIER ALGEBRA	3
TTG211	TELECOMMUNICATION ENGINEERING PRACTICE I	1
TOTAL		20

SEMESTER 4

CODE	COURSE	CREDITS
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETICS I	3
FEG2D3	SIGNAL AND LINEAR SYSTEMS	3
FEG2E3	TELECOMMUNICATION NETWORK AND INFORMATION	3
ELG3A3	MICROPROCESSOR	3
FEG2F4	ELECTRONICS I	4
TTG221	TELECOMMUNICATION ENGINEERING PRACTICE II	1
TOTAL		19

SEMESTER 5

CODE	COURSE	CREDITS
TTG3A3	COMMUNICATION SYSTEMS I	3
TTG3C3	ELECTROMAGNETICS II	3
FEG3A3	DIGITAL SIGNAL PROCESSING	3
TTG3E3	SWITCHING TECHNIQUE	3
TTG3H3	OBJECT-BASED PROGRAMMING	3
EIG463	PROJECT MANAGEMENT	3
TTG311	TELECOMMUNICATION ENGINEERING PRACTICE III	1
TOTAL		19

SEMESTER 6

CODE	COURSE	CREDITS
TTG3B3	COMMUNICATION SYSTEMS II	3
TTG3D3	ANTENNA AND PROPAGATION	3
TTG3F3	OPTIC COMMUNICATION SYSTEMS	3
TTG3G3	COMMUNICATION ELECTRONICS	3
FEG2G3	DATA COMMUNICATION NETWORKS	3
TTG3J3	TRAFFIC ENGINEERING	3
TTG321	TELECOMMUNICATION ENGINEERING PRACTICE IV	1
TOTAL		19

SEMESTER 7

CODE	COURSE	CREDITS
	THE ELECTIVE COURSE 1	3
	THE ELECTIVE COURSE 2	3
	THE ELECTIVE COURSE 3	3
	THE ELECTIVE COURSE 4	3
IEG2H2	ENGINEERING ECONOMICS	2
FEG4A2	FINAL PROJECT SEMINAR AND PROPOSAL	2
TOTAL		16

SEMESTER 8

CODE	COURSE	CREDITS
EIG422	INOVATION AND ENTREPRENEURSHIP	2
	THE ELECTIVE COURSE 5	3
HUG1G2	PANCASILA AND CIVICS	2
HUG2A2	ON JOB TRAINING	2
FEG4B2	INTERSHIP	2
FEG4C4	FINAL PROJECT	4
TOTAL		15

CURRICULUM 2016

SEMESTER 1

CODE	COURSE	CREDITS
MUH1B3	CALCULUS 1 B	3
FUH1A3	BASIC PHYSICS B	3
LUH1B2	ENGLISH I	2
HUH1G3	PANCASILA AND CIVICS	3
KUH1A3	CHEMISTRY	3
LUH1A2	INDONESIAN LANGUANGE	2
FUH1B1	BASIC PHYSICS A LAB. WORK	1
HUH1X2	RELIGION AND ETHICS	2
JUMLAH		19

SEMESTER 2

CODE	COURSE	CREDITS
MUH1B3	CALCULUS 2 B	3
FUH1D3	BASIC PHYSICS B	3
TTH1A3	INTRODUCTION TO TELECOMMUNICATION ENGINEERING	2
FEH1J2	CONCEPT OF SCIENCE AND TECHNOLOGY DEVELOPMENT A	2
LUH2C2	ENGLISH II	2
FEH1H3	ALGORITHM AND PROGRAMMING	3
FEH1I1	ALGORITHM AND PROGRAMMING B LAB. WORK	1
DUH1A2	ICT LITERACY	2
FUH1E1	INTERMEDIATE PHYSICS A LAB. WORK	2
TOTAL		20

SEMESTER 3

CODE	COURSE	CREDITS
FEH2I3	DIFFERENTIAL EQUATION AND APPLICATION	3
FEH2J3	DISCRETE MATHEMATICS B	3
TTH2A3	TELECOMMUNICATIONS NETWORK AND SWITCHING	3
FEH2H3	BOOLEAN ALGEBRA AND LOGIC CIRCUITS	3
FEH2B4	ELECTRIC CIRCUITS	3
MUH1G3	MATRICES AND VECTOR SPACES	3
TTH2B1	TELECOMMUNICATION LAB. WORK I	1
TOTAL		19

SEMESTER 4

CODE	COURSE	CREDITS
MUH1F3	PROBABILITY AND STATISTICS	3
FEH2F3	ELECTROMAGNETICS	3
FEH2L3	CONTINUOUS-TIME SIGNAL PROCESSING	3
FEH2K3	COMPLEX VARIABLES	3
TTH2D3	MICROPROCESSOR	3
FEH2G4	ELECTRONICS	4
TTH2E1	TELECOMMUNICATION LAB. WORK II	1
TOTAL		20

SEMESTER 5

CODE	COURSE	CREDITS
TTH3A4	COMMUNICATION SYSTEMS	4
TTH3B3	ELECTROMAGNETICS FOR TELECOMMUNICATIONS	3
FEH3A3	DISCRETE-TIME SIGNAL PROCESSING	3
TTH3C3	COMMUNICATION AND DATA NETWORKS	3
TTH3D3	OBJECT-BASED PROGRAMMING	3
DUH2A2	ENTREPRENEURSHIP	2
TTH3E1	TELECOMMUNICATION LAB. WORK III	1
TOTAL		19

SEMESTER 6

CODE	COURSE	CREDITS
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENNA AND PROPAGATION	3
TTH3H3	OPTIC COMMUNICATION SYSTEMS	3
TTH3K3	NETWORK SECURITY	3
TTH3I3	COMMUNICATION ELECTRONICS	3
TTH3J3	TRAFFIC ENGINEERING	3
TTH3F1	TELECOMMUNICATION LAB. WORK IV	1
FEH2E2	ENGINEERING ECONOMICS B	2
TOTAL		20

SEMESTER 7

CODE	COURSE	CREDITS
	THE ELECTIVE COURSE 1	3
	THE ELECTIVE COURSE 2	3
TTH4A3	WIRELESS COMMUNICATION SYSTEMS	3
FEH3C3	THE ELECTIVE COURSE 3	3
FEH4A2	SCIENTIFIC AND PROPOSAL WRITING	2
TOTAL		14

SEMESTER 8

CODE	COURSE	CREDITS
FEH3C3	PROJECT MANAGEMENT	3
	THE ELECTIVE COURSE 4	3
DUH2B2	ON JOB TRAINING *)	2
FEH3B2	INTERSHIP *)	2
FEH4B4	FINAL PROJECT	4
TOTAL		14

8.2 Skenario Ekivalensi Angkatan 2015

8.2 Equivalence Scenario For Class of 2015

Aturan ekivalensi sebagai berikut :

1. Jumlah SKS lulus minimum adalah 144 SKS
2. Tingkat 1 menggunakan kurikulum 2012, tingkat 2 sampai tingkat 4 menggunakan kurikulum 2016
3. Jika ada mata kuliah tingkat 1 yang tidak lulus, maka wajib mengambil mengambil matakuliah di kurikulum 2016 yang ekivalen dengan mata kuliah yang tidak lulus tersebut
4. Jika tidak lulus mata kuliah pengetahuan lingkungan, maka wajib menggenapkan SKS lulus minimal dengan mengambil mata kuliah pilihan atau mata kuliah lain yang belum pernah diambil
5. Jika tidak lulus mata kuliah yang tidak ada ekivalensinya di kurikulum 2016, maka wajib menggenapkan SKS lulus minimal dengan mengambil mata kuliah pilihan atau mata kuliah lain yang belum pernah diambil.

SEMESTER 1		
KODE	**MATA KULIAH**	**SKS**
MUG1A4	KALKULUS I	4
FUG1A3	FISIKA I	3
BUG1D2	BAHASA INGGRIS I	2
HUG1K3	PENGENALAN TEKNIK TELEKOMUNIKASI	3
HUG1J2	KIMIA	3
BUG1A2	BAHASA INDONESIA	2
FUG1B1	PRAKTIKUM FISIKA I	1
JUMLAH		18
SEMESTER 2		
KODE	**MATA KULIAH**	**SKS**
MUG1B4	KALKULUS II	4
FUG1C3	FISIKA II	3
HUG1H2	PENGETAHUAN LINGKUNGAN	2
HUG1A2	PENDIDIKAN AGAMA DAN ETIKA	2
BUG1G2	BAHASA INGGRIS II	2
KUG1A3	ALGORITMA DAN PEMROGRAMAN	3
KUG1B1	PRAKTIKUM ALGORITMA DAN PEMROGRAMAN	1
HUG1I2	KONSEP PENGEMBANGAN SAINS DAN TEKNOLOG	2
FUG1D1	PRAKTIKUM FISIKA II	1
JUMLAH		20

Gambar 4 Mata Kuliah Tingkat 1 yang Telah diambil Angkatan 2015

Jumlah SKS tingkat 1 yang ditempuh mahasiswa angkatan 2015 adalah 38 SKS. Tingkat 2 sampai dengan tingkat 4 menggunakan kurikulum 2016, mata kuliah yang diambil adalah sebagai berikut :

SEMESTER 3		
KODE	MATA KULIAH	SKS
FEH2I3	PERSAMAAN DIFERENSIAL DAN APLIKASI	3
FEH2J3	MATEMATIKA DISKRIT B	3
TTH2A3	JARINGAN DAN TEKNIK PENYAMBUNGAN TELEKOMUNIKA	3
FEH2H3	ALJABAR BOOLEAN DAN RANGKAIAN LOGIKA	3
FEH2B4	RANGKAIAN LISTRIK	4
MUH1G3	MATRIKS DAN RUANG VEKTOR	3
TTH2B1	PRAKTIKUM TEKNIK TELEKOMUNIKASI I (RANGK LOG-JTPT-	1
JUMLAH		20
SEMESTER 4		
KODE	MATA KULIAH	SKS
MUH1F3	PROBABILITAS DAN STATISTIK	3
FEH2F3	ELEKTROMAGNETIKA	3
FEH2L3	PENGOLAHAN SINYAL WAKTU KONTINYU	3
FEH2K3	VARIABEL KOMPLEKS	3
TTH2D3	MIKROPROSESOR	3
FEH2G4	ELEKTRONIKA	4
TTH2E1	PRAKTIKUM TEKNIK TELEKOMUNIKASI II (MIKRO-ELKA)	1
JUMLAH		20
SEMESTER 5		
KODE	MATA KULIAH	SKS
TTH3A4	SISTEM KOMUNIKASI	4
TTH3B3	ELEKTROMAGNETIKA TELEKOMUNIKASI	3
FEH3A3	PENGOLAHAN SINYAL WAKTU DISKRIT	3
TTH3C3	JARINGAN KOMUNIKASI DAN DATA	3
TTH3D3	PEMROGRAMAN BERBASIS OBJEK	3
DUH2A2	KEWIRAUSAHAAN	2
TTH3E1	PRAKTIKUM TEKNIK TELEKOMUNIKASI III (SISKOM-ELMAG	1
JUMLAH		19
SEMESTER 6		
KODE	MATA KULIAH	SKS
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENA DAN PROPAGASI	3
TTH3H3	SISTEM KOMUNIKASI OPTIK	3
TTH3K3	KEAMANAN JARINGAN	3
TTH3I3	ELEKTRONIKA TELEKOMUNIKASI	3
TTH3J3	REKAYASA TRAFIK	3
TTH3F1	PRAKTIKUM TEKNIK TELEKOMUNIKASI IV (ANPROP-SKO-EL	1
FEH2E2	EKONOMI TEKNIK B	2
JUMLAH		20
SEMESTER 7		
KODE	MATA KULIAH	SKS
	MATA KULIAH PILIHAN TT#1	3
	MATA KULIAH PILIHAN TT#2	3
TTH4A3	SISTEM KOMUNIKASI NIRKABEL	3
	MATA KULIAH PILIHAN #3	3
FEH4A2	PENYUSUNAN KARYA ILMIAH DAN PROPOSAL	2
JUMLAH		14
SEMESTER 8		
KODE	MATA KULIAH	SKS
FEH3C3	MANAJEMEN PROYEK	3
	MATA KULIAH PILIHAN #4	3
DUH2B2	GELADI *)	2
FEH3B2	KERJA PRAKTEK *)	2
FEH4B4	TUGAS AKHIR	4
JUMLAH		14

Gambar 5 Mata Kuliah Yang Diambil Semester 3 Sampai 8 Untuk Angkatan 2015

Jumlah SKS yang diambil menggunakan kurikulum 2016 adalah 106 SKS sehingga jumlah SKS total adalah 38 + 106 = 144 SKS.

Equivalence rules as follows :

1. *The minimum number of credits to graduate is 144 credits*
2. *The 1st level using curriculum in 2012, 2nd to 4th level using curriculum 2016*
3. *If there are subjects that did not pass at the first level, then it must take courses in the curriculum 2016 which is equivalent to subjects who did not pass in the curriculum 2012*
4. *If there are student who are not pass the environmental knowledge course, it shall fulfill the minimum graduation credits by taking elective courses or other courses that have not been taken*
5. *If there is student who are not pass the certain course that have no equivalence course in curriculum 2016, it shall fulfill the minimum graduation credits by taking elective courses or other courses that have not been taken in curriculum 2016*

SEMESTER 1		
CODE	**COURSE**	**CREDITS**
MUH1B3	CALCULUS 1 B	3
FUH1A3	BASIC PHYSICS B	3
LUH1B2	ENGLISH I	2
HUH1G3	PANCASILA AND CIVICS	3
KUH1A3	CHEMISTRY	3
LUH1A2	INDONESIAN LANGUANGE	2
FUH1B1	BASIC PHYSICS A LAB. WORK	1
HUH1X2	RELIGION AND ETHICS	2
JUMLAH		19
SEMESTER 2		
CODE	**COURSE**	**CREDITS**
MUH1B3	CALCULUS 2 B	3
FUH1D3	BASIC PHYSICS B	3
TTH1A3	INTRODUCTION TO TELECOMMUNICATION ENGINEERING	2
FEH1J2	CONCEPT OF SCIENCE AND TECHNOLOGY DEVELOPMENT A	2
LUH2C2	ENGLISH II	2
FEH1H3	ALGORITHM AND PROGRAMMING	3
FEH1I1	ALGORITHM AND PROGRAMMING B LAB. WORK	1
DUH1A2	ICT LITERACY	2
FUH1E1	INTERMEDIATE PHYSICS A LAB. WORK	2
TOTAL		20

Figure 4 The Courses Have Taken by student of class of 2015 at semester 1 and 2

The number of credits taken by students at 1st level class of 2015 is 38 credits. 2nd Level to 4th level using curriculum 2016, courses taken are as follows :

SEMESTER 3		
CODE	COURSE	CREDITS
FEH2I3	DIFFERENTIAL EQUATION AND APPLICATION	3
FEH2J3	DISCRETE MATHEMATICS B	3
TTH2A3	TELECOMMUNICATIONS NETWORK AND SWITCHING	3
FEH2H3	BOOLEAN ALGEBRA AND LOGIC CIRCUITS	3
FEH2B4	ELECTRIC CIRCUITS	3
MUH1G3	MATRICES AND VECTOR SPACES	3
TTH2B1	TELECOMMUNICATION LAB. WORK I	1
TOTAL		19
SEMESTER 4		
CODE	COURSE	CREDITS
MUH1F3	PROBABILITY AND STATISTICS	3
FEH2F3	ELECTROMAGNETICS	3
FEH2L3	CONTINUOUS-TIME SIGNAL PROCESSING	3
FEH2K3	COMPLEX VARIABLES	3
TTH2D3	MICROPROCESSOR	3
FEH2G4	ELECTRONICS	4
TTH2E1	TELECOMMUNICATION LAB. WORK II	1
TOTAL		20
SEMESTER 5		
CODE	COURSE	CREDITS
TTH3A4	COMMUNICATION SYSTEMS	4
TTH3B3	ELECTROMAGNETICS FOR TELECOMMUNICATIONS	3
FEH3A3	DISCRETE-TIME SIGNAL PROCESSING	3
TTH3C3	COMMUNICATION AND DATA NETWORKS	3
TTH3D3	OBJECT-BASED PROGRAMMING	3
DUH2A2	ENTREPRENEURSHIP	2
TTH3E1	TELECOMMUNICATION LAB. WORK III	1
TOTAL		19
SEMESTER 6		
CODE	COURSE	CREDITS
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENNA AND PROPAGATION	3
TTH3H3	OPTIC COMMUNICATION SYSTEMS	3
TTH3K3	NETWORK SECURITY	3
TTH3I3	COMMUNICATION ELECTRONICS	3
TTH3J3	TRAFFIC ENGINEERING	3
TTH3F1	TELECOMMUNICATION LAB. WORK IV	1
FEH2E2	ENGINEERING ECONOMICS B	2
TOTAL		20
SEMESTER 7		
CODE	COURSE	CREDITS
	THE ELECTIVE COURSE 1	3
	THE ELECTIVE COURSE 2	3
TTH4A3	WIRELESS COMMUNICATION SYSTEMS	3
FEH3C3	THE ELECTIVE COURSE 3	3
FEH4A2	SCIENTIFIC AND PROPOSAL WRITING	2
TOTAL		14
SEMESTER 8		
CODE	COURSE	CREDITS
FEH3C3	PROJECT MANAGEMENT	3
	THE ELECTIVE COURSE 4	3
DUH2B2	ON JOB TRAINING *)	2
FEH3B2	INTERSHIP *)	2
FEH4B4	FINAL PROJECT	4
TOTAL		14

Figure 5 Courses Have Taken By Student of Class of 2015 at 3rd semester until 8th semester

The number of credits taken using the curriculum in 2016 is 106 credits so the total number of credits is 38 + 106 = 144 credits.

8.3 Skenario Ekivalensi Angkatan 2014

8.3 Equivalence Scenario for Class of 2014

Aturan ekivalensi sebagai berikut :

1. Jumlah SKS lulus minimum adalah 144 SKS
2. Tingkat 1 dan tingkat 2 menggunakan kurikulum 2012, tingkat 3 dan tingkat 4 menggunakan kurikulum 2016
3. Jika ada mata kuliah tingkat 1 dan tingkat 2 yang tidak lulus, maka wajib mengambil mengambil matakuliah di kurikulum 2016 yang ekivalen dengan mata kuliah yang tidak lulus tersebut
4. Jika tidak lulus mata kuliah yang tidak ada ekivalensinya di kurikulum 2016, maka wajib menggenapkan SKS lulus minimal dengan mengambil mata kuliah pilihan atau mata kuliah lain yang belum pernah diambil

Jumlah SKS lulus semester 1 sampai semester 4 adalah 77 SKS. Semester 5 sampai semester 8 menggunakan kurikulum 2016, jumlah SKS lulus semester 5 sampai semester 8 adalah 67 SKS. Jumlah SKS total yang diambil mahasiswa angkatan 2014 adalah 144 SKS.

SEMESTER 1		
KODE	**MATA KULIAH**	**SKS**
MUG1A4	KALKULUS I	4
FUG1A3	FISIKA I	3
BUG1D2	BAHASA INGGRIS I	2
HUG1K3	PENGENALAN TEKNIK TELEKOMUNIKASI	3
HUG1J2	KIMIA	3
BUG1A2	BAHASA INDONESIA	2
FUG1B1	PRAKTIKUM FISIKA I	1
JUMLAH		18
SEMESTER 2		
KODE	**MATA KULIAH**	**SKS**
MUG1B4	KALKULUS II	4
FUG1C3	FISIKA II	3
HUG1H2	PENGETAHUAN LINGKUNGAN	2
HUG1A2	PENDIDIKAN AGAMA DAN ETIKA	2
BUG1G2	BAHASA INGGRIS II	2
KUG1A3	ALGORITMA DAN PEMROGRAMAN	3
KUG1B1	PRAKTIKUM ALGORITMA DAN PEMROGRAMAN	1
HUG1I2	KONSEP PENGEMBANGAN SAINS DAN TEKNOLO	2
FUG1D1	PRAKTIKUM FISIKA II	1
JUMLAH		20
SEMESTER 3		
KODE	**MATA KULIAH**	**SKS**
MUG2D3	PROBABILITAS DAN STATISTIK	3
MUG2A3	MATEMATIKA DISKRIT	3
MUG2C3	VARIABEL KOMPLEKS	3
FEG2A3	TEKNIK DIGITAL	3
FEG2B4	RANGKAIAN LISTRIK	4
MUG1E3	ALJABAR LINIER	3
TTG211	PRAKTIKUM TEKNIK TELEKOMUNIKASI I	1
JUMLAH		20
SEMESTER 4		
KODE	**MATA KULIAH**	**SKS**
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETIKA I	3
FEG2D3	SINYAL DAN SISTEM LINIER	3
FEG2E3	JARINGAN TELEKOMUNIKASI DAN INFORMASI	3
ELG3A3	MIKROPROSESSOR	3
FEG2F4	ELEKTRONIKA I	4
TTG221	PRAKTIKUM TEKNIK TELEKOMUNIKASI II	1
JUMLAH		19

Gambar 6 Mata Kuliah yang diambil pada semester 1 sampai 4

SEMESTER 5		
KODE	**MATA KULIAH**	**SKS**
TTH3A4	SISTEM KOMUNIKASI	4
TTH3B3	ELEKTROMAGNETIKA TELEKOMUNIKASI	3
FEH3A3	PENGOLAHAN SINYAL WAKTU DISKRIT	3
TTH3C3	JARINGAN KOMUNIKASI DAN DATA	3
TTH3D3	PEMROGRAMAN BERBASIS OBJEK	3
DUH2A2	KEWIRAUSAHAAN	2
TTH3E1	PRAKTIKUM TEKNIK TELEKOMUNIKASI III (SISKOM-ELMAG	1
JUMLAH		19
SEMESTER 6		
KODE	**MATA KULIAH**	**SKS**
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENA DAN PROPAGASI	3
TTH3H3	SISTEM KOMUNIKASI OPTIK	3
TTH3K3	KEAMANAN JARINGAN	3
TTH3I3	ELEKTRONIKA TELEKOMUNIKASI	3
TTH3J3	REKAYASA TRAFIK	3
TTH3F1	PRAKTIKUM TEKNIK TELEKOMUNIKASI IV (ANPROP-SKO-EL	1
FEH2E2	EKONOMI TEKNIK B	2
JUMLAH		20
SEMESTER 7		
KODE	**MATA KULIAH**	**SKS**
	MATA KULIAH PILIHAN TT#1	3
	MATA KULIAH PILIHAN TT#2	3
TTH4A3	SISTEM KOMUNIKASI NIRKABEL	3
	MATA KULIAH PILIHAN #3	3
FEH4A2	PENYUSUNAN KARYA ILMIAH DAN PROPOSAL	2
JUMLAH		14
SEMESTER 8		
KODE	**MATA KULIAH**	**SKS**
FEH3C3	MANAJEMEN PROYEK	3
	MATA KULIAH PILIHAN #4	3
DUH2B2	GELADI *)	2
FEH3B2	KERJA PRAKTEK *)	2
FEH4B4	TUGAS AKHIR	4
JUMLAH		14

Gambar 7 Mata kuliah yang diambil pada semester 5 sampai 8

Equivalence rules as follows :

1. *The minimum number of credits graduation is 144 credits*
2. *The 1st level and 2nd level using curriculum in 2012, 3nd level and 4th level using curriculum 2016*

3. *If there are subjects that do not pass at the first and second level level, then it must take courses in the curriculum 2016 which is equivalent to subjects who did not pass in the curriculum 2012*
4. *If there is student who are not pass the certain course that have no equivalence course in curriculum 2016, it shall fulfill the minimum graduation credits by taking elective courses or other courses that have not been taken in curriculum 2016*

The number of credits passed the 1st semester to semester 4th is 77 credits. Semester 5thto semester 8th use the curriculum 2016, the number of credits passed the 5th semester to semester 8th is 67 credits. Total number of credits taken by the class of 2014 was 144 credits.

SEMESTER 1		
CODE	**COURSE**	**CREDITS**
MUG1A4	CALCULUS I	4
FUG1A3	PHYSICS I	3
BUG1D2	ENGLISH I	2
HUG1K3	INTRODUCTION TO TELECOMMUNICATION ENGINEERING	3
HUG1J2	CHEMISTRY	3
BUG1A2	INDONESIAN LANGUANGE	2
FUG1B1	LABORATORY PRACTICE : PHYSICS I	1
TOTAL		18
SEMESTER 2		
CODE	**COURSE**	**CREDITS**
MUG1B4	CALCULUS II	4
FUG1C3	PHYSICS II	3
HUG1H2	ENVIRONMENT SCIENCE	2
HUG1A2	RELIGION AND ETHICS	2
BUG1G2	ENGLISH II	2
KUG1A3	ALGORITHM AND PROGRAMMING	3
KUG1B1	ALGORITHM AND PROGRAMMING LABORATORY PRACTICE	1
HUG1I2	CONCEPT OF SAINS AND TECHNOLOGY	2
FUG1D1	LABORATORY PRACTICE : PHYSICS II	1
TOTAL		20
SEMESTER 3		
CODE	**COURSE**	**CREDITS**
MUG2D3	PROBABILITY AND STATISTICS	3
MUG2A3	DISCRETE MATHEMATICS	3
MUG2C3	COMPLEX VARIABLES	3
FEG2A3	DIGITAL TECHNIQUE	3
FEG2B4	ELECTRIC CIRCUITS	4
MUG1E3	LINIER ALGEBRA	3
TTG211	TELECOMMUNICATION ENGINEERING PRACTICE I	1
TOTAL		20
SEMESTER 4		
CODE	**COURSE**	**CREDITS**
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETICS I	3
FEG2D3	SIGNAL AND LINEAR SYSTEMS	3
FEG2E3	TELECOMMUNICATION NETWORK AND INFORMATION	3
ELG3A3	MICROPROCESSOR	3
FEG2F4	ELECTRONICS I	4
TTG221	TELECOMMUNICATION ENGINEERING PRACTICE I	1
TOTAL		19

Figure 6 Courses have been taken at 1st semester until 4th semester

SEMESTER 5		
CODE	COURSE	CREDITS
TTH3A4	COMMUNICATION SYSTEMS	4
TTH3B3	ELECTROMAGNETICS FOR TELECOMMUNICATIONS	3
FEH3A3	DISCRETE-TIME SIGNAL PROCESSING	3
TTH3C3	COMMUNICATION AND DATA NETWORKS	3
TTH3D3	OBJECT-BASED PROGRAMMING	3
DUH2A2	ENTREPRENEURSHIP	2
TTH3E1	TELECOMMUNICATION LAB. WORK III	1
TOTAL		19
SEMESTER 6		
CODE	COURSE	CREDITS
FEH2D2	STUDIUM GENERALE	2
TTH3G3	ANTENNA AND PROPAGATION	3
TTH3H3	OPTIC COMMUNICATION SYSTEMS	3
TTH3K3	NETWORK SECURITY	3
TTH3I3	COMMUNICATION ELECTRONICS	3
TTH3J3	TRAFFIC ENGINEERING	3
TTH3F1	TELECOMMUNICATION LAB. WORK IV	1
FEH2E2	ENGINEERING ECONOMICS B	2
TOTAL		20
SEMESTER 7		
CODE	COURSE	CREDITS
	THE ELECTIVE COURSE 1	3
	THE ELECTIVE COURSE 2	3
TTH4A3	WIRELESS COMMUNICATION SYSTEMS	3
FEH3C3	THE ELECTIVE COURSE 3	3
FEH4A2	SCIENTIFIC AND PROPOSAL WRITING	2
TOTAL		14
SEMESTER 8		
CODE	COURSE	CREDITS
FEH3C3	PROJECT MANAGEMENT	3
	THE ELECTIVE COURSE 4	3
DUH2B2	ON JOB TRAINING *)	2
FEH3B2	INTERSHIP *)	2
FEH4B4	FINAL PROJECT	4
TOTAL		14

Figure 7 Courses have been taken at 5th semester until 8th semester

8.4 Skenario Ekivalensi Angkatan 2013

8.4 Equivalence Scenario for Class of 2013

Aturan ekivalensi sebagai berikut :

1. Jumlah SKS lulus minimum adalah 144 SKS

2. Tingkat 1 sampai tingkat 3 menggunakan kurikulum 2012, tingkat 4 menggunakan kurikulum 2016
3. Jika ada mata kuliah tingkat 1 sampai tingkat 3 yang tidak lulus, maka wajib mengambil mengambil matakuliah di kurikulum 2016 yang ekivalen dengan mata kuliah yang tidak lulus tersebut
4. Jika tidak lulus mata kuliah yang tidak ada ekivalensinya di kurikulum 2016, maka wajib menggenapkan SKS lulus minimal dengan mengambil mata kuliah pilihan atau mata kuliah lain yang belum pernah diambil

Jumlah SKS lulus semester 1 sampai semester 6 dengan menggunakan kurikulum 2012 adalah 115 SKS. Jumlah SKS lulus semester 7 dan semester 8 menggunakan kurikulum 2016 adalah 28 SKS, sehingga jumlah SKS total yang lulus adalah 143 SKS. Untuk menggenapkan jumlah SKS lulus menjadi 144 maka dapat mengambil mata kuliah pilihan atau mata kuliah lain di tingkat 4 yang belum pernah diambil.

SEMESTER 1		
KODE	MATA KULIAH	SKS
MUG1A4	KALKULUS I	4
FUG1A3	FISIKA I	3
BUG1D2	BAHASA INGGRIS I	2
HUG1K3	PENGENALAN TEKNIK TELEKOMUNIKASI	3
HUG1J2	KIMIA	3
BUG1A2	BAHASA INDONESIA	2
FUG1B1	PRAKTIKUM FISIKA I	1
JUMLAH		18
SEMESTER 2		
KODE	MATA KULIAH	SKS
MUG1B4	KALKULUS II	4
FUG1C3	FISIKA II	3
HUG1H2	PENGETAHUAN LINGKUNGAN	2
HUG1A2	PENDIDIKAN AGAMA DAN ETIKA	2
BUG1G2	BAHASA INGGRIS II	2
KUG1A3	ALGORITMA DAN PEMROGRAMAN	3
KUG1B1	PRAKTIKUM ALGORITMA DAN PEMROGRAMAN	1
HUG1I2	KONSEP PENGEMBANGAN SAINS DAN TEKNOLO	2
FUG1D1	PRAKTIKUM FISIKA II	1
JUMLAH		20
SEMESTER 3		
KODE	MATA KULIAH	SKS
MUG2D3	PROBABILITAS DAN STATISTIK	3
MUG2A3	MATEMATIKA DISKRIT	3
MUG2C3	VARIABEL KOMPLEKS	3
FEG2A3	TEKNIK DIGITAL	3
FEG2B4	RANGKAIAN LISTRIK	4
MUG1E3	ALJABAR LINIER	3
TTG211	PRAKTIKUM TEKNIK TELEKOMUNIKASI I	1
JUMLAH		20
SEMESTER 4		
KODE	MATA KULIAH	SKS
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETIKA I	3
FEG2D3	SINYAL DAN SISTEM LINIER	3
FEG2E3	JARINGAN TELEKOMUNIKASI DAN INFORMASI	3
ELG3A3	MIKROPROSESSOR	3
FEG2F4	ELEKTRONIKA I	4
TTG221	PRAKTIKUM TEKNIK TELEKOMUNIKASI II	1
JUMLAH		19
SEMESTER 5		
KODE	MATA KULIAH	SKS
TTG3A3	SISTEM KOMUNIKASI I	3
TTG3C3	ELEKTROMAGNETIKA II	3
FEG3A3	PENGOLAHAN SINYAL DIGITAL	3
TTG3E3	TEKNIK SWITCHING	3
TTG3H3	PEMROGRAMAN BERBASIS OBJEK	3
EIG463	MANAJEMEN PROYEK	3
TTG311	PRAKTIKUM TEKNIK TELEKOMUNIKASI III	1
JUMLAH		19
SEMESTER 6		
KODE	MATA KULIAH	SKS
TTG3B3	SISTEM KOMUNIKASI II	3
TTG3D3	ANTENA DAN PROPAGASI	3
TTG3F3	SISTEM KOMUNIKASI OPTIK	3
TTG3G3	ELEKTRONIKA TELEKOMUNIKASI	3
FEG2G3	JARINGAN KOMUNIKASI DATA	3
TTG3J3	REKAYASA TRAFIK	3
TTG321	PRAKTIKUM TEKNIK TELEKOMUNIKASI IV	1
JUMLAH		19

Gambar 8 Mata Kuliah yang diambil semester 1 sampai 6

SEMESTER 7		
KODE	MATA KULIAH	SKS
	MATA KULIAH PILIHAN TT#1	3
	MATA KULIAH PILIHAN TT#2	3
TTH4A3	SISTEM KOMUNIKASI NIRKABEL	3
	MATA KULIAH PILIHAN #3	3
FEH4A2	PENYUSUNAN KARYA ILMIAH DAN PROPOSAL	2
JUMLAH		14
SEMESTER 8		
KODE	MATA KULIAH	SKS
FEH3C3	MANAJEMEN PROYEK	3
	MATA KULIAH PILIHAN #4	3
DUH2B2	GELADI *)	2
FEH3B2	KERJA PRAKTEK *)	2
FEH4B4	TUGAS AKHIR	4
JUMLAH		14

Gambar 9 Mata Kuliah yang diambil semester 7 dan 8

Equivalence rules as follows :

1. *The minimum number of credits graduation is 144 credits*
2. *The 1st level to 3nd level using curriculum in 2012, 4th level using curriculum 2016*
3. *If there are subjects that do not pass at the first until third level, then it must take courses in the curriculum 2016 which is equivalent to subjects who did not pass in the curriculum 2012*
4. *If there is student who are not pass the certain course that have no equivalence course in curriculum 2016, it shall fulfill the minimum graduation credits by taking elective courses or other courses that have not been taken in curriculum 2016*

The number of credits passed the 1st semester to 6th semester use curriculum 2012 is 115 credits. The number of credits passed at the 7th semester and 8th semester in curriculum 2016 is 28 credits, so that the total number of credits that graduation is 143 credits. To fulfill the number of credits passed to 144, it can take elective courses or other courses at level 4 has never been taken.

SEMESTER 1		
CODE	COURSE	CREDITS
MUG1A4	CALCULUS I	4
FUG1A3	PHYSICS I	3
BUG1D2	ENGLISH I	2
HUG1K3	INTRODUCTION TO TELECOMMUNICATION ENGINEERING	3
HUG1J2	CHEMISTRY	3
BUG1A2	INDONESIAN LANGUANGE	2
FUG1B1	LABORATORY PRACTICE : PHYSICS I	1
TOTAL		18
SEMESTER 2		
CODE	COURSE	CREDITS
MUG1B4	CALCULUS II	4
FUG1C3	PHYSICS II	3
HUG1H2	ENVIRONMENT SCIENCE	2
HUG1A2	RELIGION AND ETHICS	2
BUG1G2	ENGLISH II	2
KUG1A3	ALGORITHM AND PROGRAMMING	3
KUG1B1	ALGORITHM AND PROGRAMMING LABORATORY PRACTICE	1
HUG1I2	CONCEPT OF SAINS AND TECHNOLOGY	2
FUG1D1	LABORATORY PRACTICE : PHYSICS II	1
TOTAL		20
SEMESTER 3		
CODE	COURSE	CREDITS
MUG2D3	PROBABILITY AND STATISTICS	3
MUG2A3	DISCRETE MATHEMATICS	3
MUG2C3	COMPLEX VARIABLES	3
FEG2A3	DIGITAL TECHNIQUE	3
FEG2B4	ELECTRIC CIRCUITS	4
MUG1E3	LINIER ALGEBRA	3
TTG211	TELECOMMUNICATION ENGINEERING PRACTICE I	1
TOTAL		20
SEMESTER 4		
CODE	COURSE	CREDITS
TTG2B2	STUDIUM GENERALE	2
FEG2C3	ELEKTROMAGNETICS I	3
FEG2D3	SIGNAL AND LINEAR SYSTEMS	3
FEG2E3	TELECOMMUNICATION NETWORK AND INFORMATION	3
ELG3A3	MICROPROCESSOR	3
FEG2F4	ELECTRONICS I	4
TTG221	TELECOMMUNICATION ENGINEERING PRACTICE I	1
TOTAL		19
SEMESTER 5		
CODE	COURSE	CREDITS
TTG3A3	COMMUNICATION SYSTEMS I	3
TTG3C3	ELECTROMAGNETICS II	3
FEG3A3	DIGITAL SIGNAL PROCESSING	3
TTG3E3	SWITCHING TECHNIQUE	3
TTG3H3	OBJECT-BASED PROGRAMMING	3
EIG463	PROJECT MANAGEMENT	3
TTG311	TELECOMMUNICATION ENGINEERING PRACTICE III	1
TOTAL		19
SEMESTER 6		
CODE	COURSE	CREDITS
TTG3B3	COMMUNICATON SYSTEMS II	3
TTG3D3	ANTENNA AND PROPAGATION	3
TTG3F3	OPTIC COMMUNICATION SYSTEMS	3
TTG3G3	COMMUNICATION ELECTRONICS	3
FEG2G3	DATA COMMUNICATION NETWORKS	3
TTG3J3	TRAFFIC ENGINEERING	3
TTG321	TELECOMMUNICATION ENGINEERING PRACTICE IV	1
TOTAL		19

Figure 8 Course have been taken at 1st semester until 6th semester

SEMESTER 7		
CODE	COURSE	CREDITS
	THE ELECTIVE COURSE 1	3
	THE ELECTIVE COURSE 2	3
TTH4A3	WIRELESS COMMUNICATION SYSTEMS	3
FEH3C3	THE ELECTIVE COURSE 3	3
FEH4A2	SCIENTIFIC AND PROPOSAL WRITING	2
TOTAL		14
SEMESTER 8		
CODE	COURSE	CREDITS
FEH3C3	PROJECT MANAGEMENT	3
	THE ELECTIVE COURSE 4	3
DUH2B2	ON JOB TRAINING *)	2
FEH3B2	INTERSHIP *)	2
FEH4B4	FINAL PROJECT	4
TOTAL		14

Figure 9 Courses have been taken at 7th semester and 8th semester

8.5 Skenario Ekivalensi Angkatan 2012 dan sebelumnya

8.5 Equivalence Scenario for Class 2012 and Before

Aturan ekivalensi :

1. Jumlah SKS lulus minimum adalah 144 SKS
2. Jika ada mata kuliah tingkat 1 sampai tingkat 4 yang tidak lulus, maka wajib mengambil mengambil matakuliah di kurikulum 2016 yang ekivalen dengan mata kuliah yang tidak lulus tersebut
3. Jika tidak lulus mata kuliah yang tidak ada ekivalensinya di kurikulum 2016, maka wajib menggenapkan SKS lulus minimal dengan mengambil mata kuliah pilihan atau mata kuliah lain yang belum pernah diambil

Equivalence scenario are as follow :

1. *The minimum number of credits graduation is 144 credits*
2. *If there are subjects that do not pass at the first until fouth level, then it must take courses in the curriculum 2016 which is equivalent to subjects who did not pass in the curriculum 2012*
3. *If there is student who are not pass the certain course that have no equivalence course in curriculum 2016, it shall fulfill the minimum graduation credits by taking elective courses or other courses that have not been taken in curriculum 2016.*

9 DESKRIPSI SINGKAT MATA KULIAH

9 *BRIEF DESCRIPTION OF COURSE*

Kalkulus IB (MUH1B3)

Calculus IB (MUH1B3)

Mata kuliah ini memberikan pengetahuan tentang konsep limit dan kekontinuan, turunan dan integral fungsi satu peubah. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan soal-soal fungsi, limit, kekontinuan, turunan dan penggunaannya, beserta integral dan penggunaanya.

This course provides knowledge about the concept of limit and continuity, derivative and integral function of one variable. This course also gives students skills on the ability of solving problems functions, limit, continuity, derivative and its use. This course also provide the ability of solving integral function and its use.

Daftar Pustaka – Bibliography

Purcell.E.J, Varberg.D, Kalkulus dan Geometri Analitis, terjemahan, Penerbit Airlangga, edisi 5, jilid 1, 2014

Stewart.J,Kalkulus, terjemahan, penerbit Airlangga, edisi 4, jilid 1, 2003

Danang Mursita, Matematika Dasar Untuk Perguruan Tinggi, Rekayasa Sains, 2006

Fisika 1 A (FUH1A3)

Physics 1 A (FUH1A3)

Kuliah ini memberikan pengetahuan dan pemahaman kepada mahasiswa tentang mekanika dan gelombang. Topik mekanika memberikan pengetahuan dan pemahaman tentang Hukum Newton, Kerja dan Energi, Momentum, Gerak Putar dan Osilasi. Topik Gelombang memberikan pengetahuan dan pemahaman tentang gelombang berjalan, interferensi, difraksi dan polarisasi.

These lectures provide knowledge and understanding to students about mechanics and wave. Topics mechanics provide knowledge and understanding of Newton's Laws, Work and Energy, Momentum, Motion Play and Oscillations. Topics Wave provides knowledge and understanding of the traveling wave, interference, diffraction and polarization.

Daftar Pustaka – Bibliography

John D. Cutnell, Kenneth W. Johnson, David Young, Shane Stadler ,"Physics", 10th edition, Jhon Wiley, 2014

David Halliday, Robert Resnick, Jearl Walker ," Fundamentals of Physics", 10th edition, Jhon Wiley,2014

Muhammad Farchani Rosyid, Yusuf Dyan Prabowo, dan Eko Firmansyah, Fisika Dasar Jilid 1 : Mekanika, Penerbit Periuk, 2014

Praktikum Fisika I A (FUH1B1)

Physics 1 A Lab Works (FUH1B1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Fisika Dasar 1. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the Basic Physics 1 courses This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

John D. Cutnell, Kenneth W. Johnson, David Young, Shane Stadler ,"Physics", 10th edition, Jhon Wiley, 2014

David Halliday, Robert Resnick, Jearl Walker ," Fundamentals of Physics", 10th edition, Jhon Wiley,2014

Muhammad Farchani Rosyid, Yusuf Dyan Prabowo, dan Eko Firmansyah, Fisika Dasar Jilid 1 : Mekanika, Penerbit Periuk, 2014

Bahasa Inggris I (LUH1B2)

English I (LUH1B2)

Mata kuliah ini membekali mahasiswa untuk dapat mengembangkan kemampuan dasar bahasa Inggris yang mencakup memahami, menyampaikan, mengkonstruksikan, dan mengkomunikasikan ide yang bermakna dalam bahasa Inggris yang baik dan berterima. Mahasiswa pun diharapkan dapat memahami dan menerima perbedaan persepsi dalam *cross-cultural understanding.*

This course equips students to develop basic capabilities that include English language understanding, convey, construct, and communicate ideas meaningful in English is good

and acceptable. Students are expected to understand and accept the differences in the perception of cross-cultural understanding.

Daftar Pustaka – Bibliography

Jones, L. (2013). *Let's Talk 1.* 28th Edition. Cambridge: Cambridge University Press
Redman, S. (2012). *English Vocabulary in Use: Pre-Intermediate and Intermediate.* Cambridge: Cambridge University Press
LeBeau C. & Harrington, D. (2006). *Discussion: Process and Principles.* Oregon: Language Solution, Inc.
Hofstede, G., Hostede, G.J., and Minkov, M. (2010). *Cultures and Organizations: Software of the Mind, Intercultural Cooperation and Its Importance for Survival*. New York: McGraw-Hill.

Bahasa Indonesia (LUH1A2)

Indonesian Language(LUH1A2)

Kuliah ini memberikan kesempatan mahasiswa berlatih menulis secara terbimbing dengan materi meliputi 1)ejaan, 2)tata kata, kalimat, dan paragraf, 3)tata istilah dan definisi, 4)pemilihan topik hingga penyusunan kerangka karya ilmiah, 5)penyusunan bab pendahuluan, kajian pustaka, analisis, simpulan, pelengkap awal, pelengkap akhir, 6)konvensi karya tulis ilmiah, serta 7)keplagiatan.

This lecture gives students the opportunity to practice writing is guided by the material includes 1) spelling, 2) order words, sentences, and paragraphs, 3) terminology and definitions, 4) the selection of topics and the preparation of the framework of scientific works, 5) preparation of the introductory chapter, study literature, analysis, conclusions, initial supplementary, complementary end, 6) Rail scientific papers, as well as 7) plagiarism.

Daftar Pustaka – Bibliography

Djuroto, Toto dan Bambang Suprijadi.2002. Menulis Artikel dan Karya Ilmiah. Bandung: Rosdakarya.

Puspandari, Diyas. 2011. *Handout Bahasa Indonesia*. Universitas Telkom.

Widjono, 2007. Bahasa Indonesia, Mata Kuliah Pengembangan Kepribadian di Perguruan Tinggi, Jakarta: Grasindo.

Pancasila dan Kewarganegaraan (HUH1G3)

Pancasila and Civics (HUH1G3)

Mata kuliah pancasila dan kewarganegaraan merupakan mata kuliah universitas yang menjelaskan hal-hal yang berkaitan dengan konsep aktualisasi dari nilai-nilai Pancasila serta kewarganegaraan Indonesia yang secara garis besar meliputi pemahaman

mengenai 1)pengembangan kepribadian, 2)ideologi berbangsa dan bernegara, 3)hak asasi manusia, 4)hak dan kewajiban warga negara, 5)aktualisasi demokrasi berkeadaban, 6)analisis penegakkan hukum dan the rules of law, serta 7)berbangsa dan bernegara

Pancasila and citizenship is the university subject that explain things that are related to theactualization concept values of Pancasila and Indonesia citizenship which is primarily based on understanding of 1) the development of personality, 2) the ideology of the state and nation, 3) human rights, 4) the rights and obligations of citizens, 5) actualization of civilizeddemocracy, 6) analysis of law enforcement and the rule of law, and 7) the state and nation

Daftar Pustaka – Bibliography

Arwiyah, Yahya.M dkk.2011. *Pendidikan Karakter* di Perguruan Tinggi. Bandung: YPT Press

Arwiyah, Yahya.M dkk.2014.Civic Education di indonesia. Bandung: ALfabeta

Arwiyah, Yahya.M.2013. *Regulasi Kewarganegaraan Indonesia.* Bandung: Alfabeta

Budimansyah, D. dan Winataputra,S,U.(2007).*Civic education konteks ,landasan, bahan ajar, dan kultur kelas.* Bandung : Program Studi Pendidikan Kewarganegaraan Sekolah Pascasarjana Universitas Pendidikan Indonesia.

Somantri, M.N. (2001). *Menggagas Pembaharuan Pendidikan* IPS, Bandung. Penerbit PT Remaja Rosdakarya.

Undang-undang Dasar 1945 pasca amandemen

Instrumen-instrumen HAM Nasional dan Internasional (PBB)

Kaelan. (1990). Pancasila. Yogyakarta : Panorama

Muchtar, K .(1983). Hukum Laut Internasional, Bandung : PT Bina Cipta

Notonagoro .(1980). Beberapa hal Mengenai Falsafah Pancasila. Jakarta : Pancuran Tujuh

Tim Dikti & Lemhannas (2003), Pendidikan Kewarganegaraan, Jakarta: PT. Gramedia

Undang-Undang No.20 Tahun 2003 Tentang Sistem Pendidikan Nasional

Undang-Undang No. 2 Tahun 2002 Tentang POLRI

Undang-Undang No.3 Tahun 2002 Tentang Pertahanan Negara.

Undang-Undang No. 22 Tahun 1999 jo. UU No.32 Tahun 2004 Tentang Pemerintahan Daerah

Branson. S. Margaret dkk. (1998). *"Belajar "Civic Education" dari Amerika"*, Yogyakarta : diterbitkan atas kerjasama : Lembaga Kajian Islam dan Sosial (LKiS) dan The Asia Foundation (TAF).

Cogan, J. J dan Derricott, R.,(1998).*Citizenship for the 21st century : An International perspective on Education*.London : Kogan Page

Kimia (KUH1A3)

Chemistry (KUH1A3)

Mata kuliah ini memberikan pemahaman mengenai 1)gambaran ilmu kimia untuk bidang teknik telekomunikasi, 2) pengertian dasar mengenai hukum-hukum dasar kimia, serta membangun pengertian, 3) hubungan energy dengan reaksi kimia, 4) konsep-konsep dasar bahasan mengenai atom dan sifat keberkalaannya, 5) konsep-konsep dasar bahasan mengenai molekul serta pembentukannya, 6) konsep dasar mengenai gas dan system Kristal, 7) pengertian mengenai interaksi senyawa-senyawa terlarut baik bersifat elektrolit dan nonelektrolit.

This course provides an understanding of 1) the image of chemistry for technical fields of telecommunications, 2) a basic understanding of the fundamental laws of chemistry, and to build understanding, 3) the relationship of energy by chemical reactions, 4) the basic concepts discussion of the atom and the nature keberkalaannya, 5) the basic concepts as well as a discussion of the molecular formation, 6) basic concepts of gas and system Kristal, 7) an understanding of the interaction of both compounds are dissolved electrolytes and Non-electrolytes.

Daftar Pustaka – Bibliography

Karen C Timberlake, William Timberlake,"Basic Chemsitry", 4th edition, Pearson, 2014

Chang R, Chemistry, 10th Edition, McGrawHill, Boston, 2010

James E. Brady, Neil D. Jespersen and A. Hyslop, Chemistry 6th ed, John Willey&Sons, New York.

Ahmad, H. , Penuntun Belajar Kimia Dasar, Citra Aditya Bakti, Bandung, 2001

Konsep Pengenalan Sains dan Teknologi A (FEH1J2)

Concept of Science and Technology Development A (FEH1J2)

Pengantar singkat tentang filsafat sains. Berfikir kritis, berfikir ilmiah dan metoda ilmiah. Perkembangan sains dalam tinjauan contoh dan sejarah. Konsep teknologi dan perkembangannya. Masalah etika dan teknologi.

A brief introduction about the philosophy of science. Critical thinking, scientific thinking and the scientific method. The progress of science in the review sample and history. The concept of technology and development. Ethical issues and technology.

Daftar Pustaka – Bibliography

Tracy Bowell and Gerry Kemp,"Critical Thinking : Concise Guide", 4th edition, 2014, RoutledgeTaylor and Francis Group

James Trefil, Robert Hazen,"The Sciences : An Integrated Approach, 6th edition, Jhon Wiley, 2010

Barry Gower,"Scientific Method : An historical and Philosophical Introduction", RoutledgeTaylor and Francis Group, 1997

Kalkulus 2B (MUH1E3)

Calculus 2B (MUH1E3)

Mata kuliah ini memberikan pengetahuan tentang konsep barisan dan deret, fungsi vektor, dan fungsi dua peubah. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan soal-soal terkait teknik pengintegralan, kekonvergenan barisan dan deret, serta integral lipat dua dan tiga.

This course provides knowledge about the concept of sequence and series, vector functions, and the function of two variables. This course also gives students skills on the ability of solving problems related to the techniques of integration, convergence of sequence and series, as well as the integral double and three.

Daftar Pustaka – Bibliography

Purcell.E.J, Varberg.D, Kalkulus dan Geometri Analitis, terjemahan, Penerbit Airlangga, edisi 5, jilid 1, 2014

Stewart.J,Kalkulus, terjemahan, penerbit Airlangga, edisi 4, jilid 1, 2003

Danang Mursita, Matematika Dasar Untuk Perguruan Tinggi, Rekayasa Sains, 2006

Fisika 2 A(FUH1D3)

Physics 2 A (FUH1D3)

Kuliah ini fokus pada fenomena listrik-magnet. Kuliah dimulai dengan materi medan listrik menggunakan hukum coulomb dan hukum gauss. Kemudian dilanjutkan dengan potensial listrik, kapasitor dan dielektrik, serta arus searah. Materi medan magnet

diberikan melalui hukum biot-savart dan hukum ampere. Selanjutnya dibahas mengenai ggl imbas dan arus bolak-balik. Kuliah diakhiri dengan materi persamaan Maxwell

This course discusses electric-magnetic phenomena. It begins with electric field by applying Coulomb law and Gauss law. Then it discusses electric potential, capacitors and dielectrics, and direct current. The discussion of magnetic field is based on Biot-Savart law and the law of amperes. Finally, it discusses the induced EMF, alternating current, and Maxwell equations.

Daftar Pustaka – Bibliography

John D. Cutnell, Kenneth W. Johnson, David Young, Shane Stadler ,"Physics", 10th edition, Jhon Wiley, 2014

David Halliday, Robert Resnick, Jearl Walker ," Fundamentals of Physics", 10th edition, Jhon Wiley,2014

Muhammad Farchani Rosyid, Yusuf Dyan Prabowo, dan Eko Firmansyah, Fisika Dasar Jilid 1 : Mekanika, Penerbit Periuk, 2014

Praktikum Fisika 2 A (FUH1E1)

Physics 2 A Lab Works (FUH1E1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Fisika Dasar 1. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the Basic Physics 1 courses This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

John D. Cutnell, Kenneth W. Johnson, David Young, Shane Stadler ,"Physics", 10th edition, Jhon Wiley, 2014

David Halliday, Robert Resnick, Jearl Walker ," Fundamentals of Physics", 10th edition, Jhon Wiley,2014

Muhammad Farchani Rosyid, Yusuf Dyan Prabowo, dan Eko Firmansyah, Fisika Dasar Jilid 1 : Mekanika, Penerbit Periuk, 2014

Pendidikan Agama Islam dan Etika (HUH1A2)

Islam Religion and Ethics (HUH1A2)

Mata kuliah pendidikan agama dan etika islam merupakan matakuliah universitas yang memiliki kompetensi dasar pemahaman bagi mahasiswa yang diharapkan mampu berfikir rasional, bersikap dewasa dan dinamis, berpandangan luas, berkomitmen kuat dan melaksanakan ajaran Islam secara utuh, serta mampu melaksanakan proses belajar sepanjang hayat untuk menjadi ilmuwan dan profesional yang berkepribadian Islami yang menjunjung tinggi nila-nilai kemanusiaqan dalam kehidupan

The religion of Islam education and ethics isthe university subject that have a basic competencies of understanding for students who are expected to rational thinking, mature and dynamic, broad-minded, strong commitment and implement the teachings of Islam as a whole, and be able to implement a lifelong learning process to be a scientists and professional personality that upholds Islamic values of humanity in life

Daftar Pustaka – Bibliography

Departemen Agama RI. 2005. *Al-Quran danTerjemahannya.*

DirektoratPerguruan Tinggi Agama Islam Departemen Agama RI.

2004.*MateriInstruksional: Pendidikan Agama Islam di Perguruan Tinggi Umum*.

Jakarta

MiftahFaridl. 2004. *Pokok-pokokAjaran Islam*. Bandung :Pustaka

Pendidikan Agama Katholik dan Etika (HUH1C2)

Catholic Religionand Ethics (HUH1C2)

Mata kuliah pendidikan agama dan etika katolik merupakan matakuliah universitas yang diharapkan mampu membentuk mahasiswa yang beriman kepada Allah menurut pola hidup Yesus Kristus dengan senantiasa mempertanggungjawabkan imannya dalam hidup menggereja dan memasyarakat. Mata kuliah ini secara aris besar meliputi pemahaman – pemahaman mengenai manusia, agama, Yesus, dan gereja.

The religion of catholic education and ethics is the university subject thatis expected to form the students who believe in Allah according to the lifestyle of Jesus Christ by continuing account for his faith in life of the Church and socialize. This subject is primarily based on the understanding of human, religion, Jesus, and the church.

Daftar Pustaka – Bibliography

Lembaga Biblika Indonesia (2001). Alkitab Deuterokanonika. Ende.

Paus Yohanes Paulus II (2007). Katekismus Gereja Katolik (KGK). Ende: Penerbit Nusa Indah.

Paus Benediktus XVI (2009). Kompendium Katekismus Gereja Katolik. Yogyakarta: Kanisius.

Tim Komkep KWI (2012). YouCat (Youth Cathecism). Yogyakarta: Kanisius.

DokPen KWI. Dokumen Ajaran Sosial Gereja. Yogyakarta: Kanisius

Pendidikan Agama Kristen dan Etika (HUH1B2)

Christian Religion and Ethics (HUH1B2)

Mata kuliah pendidikan agama dan etika Kristen merupakan mata kuliah universitas yang menitikberatkan pada ilmu Ketuhanan dan etika Kristen yang meliputi konsep konsep keilmuan mengenai 1)tritunggal, 2)manusia, 3)keselamatan, 4)iman, 5)dosa, 6)pertobatan, 7)kasih, serta 8)etika kristen yang meliputi pergaulan pra-nikah, pornografi, danokultisme.

The religion of Christian education and ethics is the university subject that have focus on the science of Christian Divinity and ethics which cover the concepts of knowledge regarding 1) the trinity, 2) human beings, 3) safety, 4) faith, 5) sin, 6) conversion, 7) love, and 8) Christian ethics that includes pre-marital promiscuity, pornography, and occultism.

Daftar Pustaka – Bibliography

Alkitab, LAI.

Brotosudarmo, Drie S. (2008). Pendidikan Agama Kristen Untuk Perguruan Tinggi.

Yogyakarta: ANDI.

Becker, Dieter (1993). Pedoman Dogmatika. Jakarta: BPK Gunung Mulia.

Niftrik, G.C van & Boland, B.J. (1987). Dogmatika Masakini. Jakarta: BPK Gunung Mulia.

Verkuyl, J. (1993). Etika Kristen Bagian Umum. Jakarta: BPK Gunung Mulia.

Darmaputra, Eka (1987). Etika Sederhana Untuk Semua. Jakarta: BPK Gunung Mulia.

Yudho, Bambang (2006). How To Overcome Occultism?. Yogyakarta: ANDI.

Hawkins, Craig S. (2004). Seluk Beluk Sihir. Yogyakarta: ANDI

Pendidikan Agama Budha dan Etika (HUH1E2)

Buddha Religion and Ethics (HUH1E2)

Mata kuliah pendidikan agama dan etika budha merupakan matakuliah universitas yang memotivasi mahasiswa dengan pemahaman dalam berketuhanan Yang Maha Esa dengan memahami berbagai keilmuan budha yang meliputi 1)teologi Ketuhanan Yang Maha Esa, 2)ilmu mengenai manusia, 3) Agama, ilmu pengetahuan, teknologi, dan seni, 4)Kerukunan antar umat beragama, serta 5)agama dalam kehidupan politik dan hukum

The religion of Buddha education and ethics is the university subject that motivate the students with an understanding of the God Almighty to understand the science of Buddha which include 1) theology on God, 2) the science of man, 3) Religion, science, technology, and the arts, 4) religious harmony, and 5) the religion in life of political and law

Daftar Pustaka – Bibliography

Mulyadi Wahyono, SH (2002). Pokok-Pokok Dasar Agama Buddha. Jakarta.

Tim Penyusun (2003). Materi Kuliah Sejarah Perkembangan Agama Buddha. CV. Dewi Kayana Abadi Jakarta.

Pandit Jinaratana Kaharudin (2005). Abhidhammatthasangaha.

Pendidikan Agama Hindu dan Etika (HUH1C2)

Hindu Religion and Ethics (HUH1C2)

Mata kuliah pendidikan agama dan etika hindu merupakan mata kuliah universitas yang mendorong mahasiswa untuk mampu menunjukkan sikap religius, kemanusiaan dan sosial, serta takwa kepada Tuhan Yang Maha Esa melalui pembelajaran berbagai kajian yang meliputi 1)ilmu pengetahuan, filsafat, dan agama, 2)etos kerja dalam hindu, 3) Weda sabda suci Tuhan sumber ajaran hindu, 4)Teologi Hindu, 5)catur purusa artha dan catur asrama, 6)Sosiologi hindu, 7)sumber dan dasar-dasar etika hindu, 8)yajna dan bhakti, serta 9)kepemimpinan hindu.

The religion of Hindu education and ethics is the university subject that encourage students to be able to demonstrate an attitude of religious, humanitarian, social, and piety to God Almighty through variouslearning studies include 1) science, philosophy, and religion, 2) work ethic in hindu, 3) Weda the holy God words of the teachings of Hindu, 4) the theology of Hindu, 5) caturpurusaartha and caturasrama, 6) The Sociology ofhindu, 7) sources and foundations of Hindu's ethics, 8) yajna and bhakti, and 9) leadership of Hindu.

Daftar Pustaka – Bibliography

I Gusti Made Ngurah, Drs, dkk. (2012). Pendidikan Agama Hindu Untuk Perguruan Tinggi, Surabaya, Paramitha.
Gelgel Prof. DR. I Putu, SH, M.Hum, Suma I Made, SH, M.Pd, Surapati I Nengah Drs, SH, MH, dkk. (2009). Hukum Hindu, Jakarta, Direktorat Jendral Bimbingan Masyarakat Hindu Departemen Agama RI.
Pudja G, SH, MA. (2012). Bhagavad Gītā, Surabaya, Paramita.

Pendidikan Agama Khong Hu Cu dan Etika (HUH1F2)

Khong Hu Cu Religion and Ethics (HUH1F2)

Mata kuliah pendidikan agama dan etika Khong Hu Cu merupakan mata kuliah universitas yang memotivasi mahasiswa dengan pemahaman dalam berketuhanan Yang Maha Esa dengan memahami berbagai keilmuan Khong Hu Cu yang meliputi 1)teologi Ketuhanan Yang MahaEsa, 2)ilmu mengenai manusia, 3) Agama, ilmu pengetahuan, teknologi, dan seni, 4)Kerukunan antar umat beragama, serta 5)agama dalam kehidupan politik dan hukum.

The religion of Khong Hu Cu education and ethics is the university subject that motivate the students with an understanding of the God Almighty to understand the science of KhongHu Cu which include 1) theology on God, 2) the science of man, 3) Religion, science, technology, and the arts, 4) religious harmony, and 5) the religion in life of political and law.

Daftar Pustaka –*Bibliography*

Kitab Sishu (2012). Kitab Suci Agama Konghucu. Surakarta: Majelis Tinggi Agama Konghucu Indonesia (MATAKIN).

-- (2011). Keputusan Bersama Menteri Agama, Jaksa Agung, dan Menteri Dalam Negeri Republik Indonesia. Jakarta: Menteri Dalam Negeri.

-- (1975). Tata Agama Dan Tata Laksana Upacara Agama Khonghucu. Surakarta: MATAKIN.

Negoro, T.K Beng Setio (2005). Rahasia Kehidupan Jilid I. Bandung: Karya Bengras.

Algoritma dan Pemrograman B (FEH1H3)

Algorithm and Programming B (FEH1H3)

Mata kuliah ini memberikan kompetensi problem solving menggunakan tool computer antara lain melalui prolog: pengertian-pengertian dasar. Notasi algoritmik (teks algoritma). Tipe dasar dan komposisi (record), harga, ekspresi, i/o, sequence, assignment, analisa kasus, fungsi dan prosedur, pengulangan, skema pemrosesan sekuensial, mesin abstrak: mesin karakter, mesin integer, mesin couple, mesin kata. Tabel: pemrosesan sekuensial pada tabel, table look up, pengurutan tabel. Sequential file menggunakan bahasa C sebagai alat bantu pemahaman.

This course provides students with the competence in problem solving using computer tools through the prologue of basic notions namely algorithmic notation (text algorithm), basic types and the composition (record), price value, expression, I/O, sequences, assignment, case analysis, functions and procedures, repetition, sequential processing scheme. It also introduces abstract machine, i.e. character engines, integer machines, couple machines, word machines. It also includes tables namely sequential processing on the table, look up table, sorting table, sequential file using the C language as a tool for understanding.

Daftar Pustaka – Bibliography

Luciano Maria Barone, Enzo Marinari,"Scientific Programming : C Languange, Algorithms and Model in Science", World Scientific, 2013

Alexander Shen,"Algorithms and Programming : Problem and Solution", Springer, 2010

Dan Gookin," C For Dummies", 2nd edition, Jhon Wiley, 2004

Praktikum Algoritma dan Pemrograman B (FEH1I1)

Algorithm and Programming B Lab Works (FEH1I1)

Mata kuliah praktikum ini membantu mahasiswa memberikan pengalaman praktis problem solving menggunakan tool computer antara lain melalui notasi algoritmik (teks algoritma). Tipe dasar dan komposisi (record), harga, ekspresi, i/o, sequence, assignment, analisa kasus, fungsi dan prosedur, pengulangan, skema pemrosesan sekuensial, mesin abstrak: mesin karakter, mesin integer, mesin couple, mesin kata. Tabel: pemrosesan sekuensial pada tabel, table look up, pengurutan tabel. sequential file, menggunakan bahasa C sebagai alat bantu pemahaman.

This Lab Works help students experience practical problem solving using computer tools, among others through algorithmic notation (text algorithm). The basic types and composition (record), price, expression, i / o, sequence, assignment, case analysis, functions and procedures, repetition, sequential processing scheme, the abstract machine: the machine code, machine integer, couple machine, the machine said. Table: sequential processing on a table, table look-up, sorting tables. sequential file, use the C language as a tool for understanding

Daftar Pustaka – Bibliography

Luciano Maria Barone, Enzo Marinari,"Scientific Programming : C Languange, Algorithms and Model in Science", World Scientific, 2013

Alexander Shen,"Algorithms and Programming : Problem and Solution", Springer, 2010

Dan Gookin," C For Dummies", 2nd edition, Jhon Wiley, 2004

Bahasa Inggris II (LUH2C2)

English II (LUH2C2)

Mempelajari 'an expository composition' dengan 'basic content' yang formal, jelas namun natural sehingga mudah dipahami oleh pembaca dan sebagai dasar untuk essay ilmiah sederhana mulai dari latihan sentence patterns secara gramatikal, paragraph organization, relating ideas, unity, coherence sampai dengan reference, substitution,

conjunction atau lexical manipulation, interpreting data, comparison, revising and editing.

This English course introduces students to an Expository composition. Students are guided to write formal and clear expository texts so that these texts are easily understood by the readers. As the basis for writing simple scientific essays, students are guided to write sentence patterns with appropriate grammar, relate ideas, organize paragraphs and to write unity paragraph using appropriate coherence to the reference, substitution, conjunction or lexical manipulation. The students are also encouraged to write data interpretation, write comparison texts, editing and revising.

Daftar Pustaka – Bibliography

Jones, L. (2013). *Let's Talk 1.* 28th Edition. Cambridge: Cambridge University Press
Redman, S. (2012). *English Vocabulary in Use: Pre-Intermediate and Intermediate.* Cambridge: Cambridge University Press
LeBeau C. & Harrington, D. (2006). *Discussion: Process and Principles.* Oregon: Language Solution, Inc.
Hofstede, G., Hostede, G.J., and Minkov, M. (2010). *Cultures and Organizations: Software of the Mind, Intercultural Cooperation and Its Importance for Survival*. New York: McGraw-Hill.

Literasi TIK (DUH1A2)

ICT Literacy (DUH1A2)

Mata kuliah ini memberikan wawasan dan kemampuan kepada mahasiswa untuk menggunakan aplikasi literasi dasar teknologi informasi dan komunikasi serta menggunakanannya untuk pencarian sumber informasi. Etika dan undang –undang yang berkaitan dengan TIK juga dipelajari pada kuliah ini.

This course provides insight and the ability for students to use basic literacy application of information and communication technology and use it to search for the source of information. Ethics and law relating to ICT are also studied in this lecture.

Daftar Pustaka – Bibliography

Framework for Information Literacy for Higher Education, The Association of College & Research Libraries, 2015

Modul Praktikum Aplikasi Perkantoran dan Pencarian Informasi, Tim Penulis Modul Praktikum S1 Teknik Informatika, Fakultas Informatika, Universitas Telkom, 2015

California ICT Digital Literacy Assessments and Curriculum Framework, 2008

Australian and New Zealand Information Literacy Framework: principles, standards and practice, second edition, Australian and New Zealand Institute for Information Literacy, 2004

Pengenalan Teknik Telekomunikasi (TTH1A2)

Introduction to Telecommunication Engineering (TTH1A2)

Pada kuliah ini mahasiswa dikenalkan tentang infrastruktur jaringan telekomunikasi serta terminology terkait untuk pengiriman informasi, voice, data dan video. Teknologi dan prosedur pengiriman informasi juga diperkenalkan pada kuliah ini. Evolusi perubahan teknologi dan perubahan prosedur terkait pengiriman informasi multimedia juga dipelajari pada kuliah ini.

In this course, students are introduced on telecommunications network infrastructure as well as the terminology related to the transmission of information, voice, data and video. Technology and information delivery procedures are also introduced in this lecture. Evolution of changes in technology and changes in the procedures regarding the transmission of multimedia information are also studied in this lecture.

Daftar Pustaka – Bibliography

Jyrki T.J Penttinen, "The Telecommunication Handbook", Jhon Wiley, 2015

Jesus Hamilton Ortiz,"Telecommunication Networks : Current Status and Future Trend, In Tech, 2012

Roger L Freeman, "Fundamentals of Telecommunications", 2nd edition, Jhon Wiley, 2005

Matriks dan Ruang Vektor (MUH1G3)

Matrices and Vector Spaces (MUH1G3)

Mata kuliah ini memberikan pengetahuan tentang matriks, determinan matriks, ruang vektor, ruang hasil kali dalam, orthogonal, orthonormal, kernel dan jangkauan suatu transformasi linier, nilai, dan vektor eigen, serta diagonalisasi. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan Operasi Baris Elementer (OBE) untuk memperoleh matriks eselon baris tereduksi, invers matriks, determinan matriks, dan solusi SPL. Serta kemampuan memeriksa apakah suatu himpunan vektor bersifat membangun dan bebas linier, menentukan basis dan dimensi ruang baris, ruang kolom, dan ruang solusi, mentransformasikan suatu basis menjadi basis orthonormal, dan menentukan proyeksi orthogonal dari vektor pada suatu bidang menggunakan metode Gramm-Schimdt, menentukan basis kernel dan jangkauan suatu TL, menentukan matriks yang mendiagonalkan A, beserta matriks diagonalnya. Serta mampu menyelesaikan sistem persamaan differensial menggunakan konsep ruang eigen

This course provides knowledge about matrices, determinants of matrices, vector spaces, inner product spaces, orthogonal, orthonormally, kernel and range of a linear transformation, value, and eigenvectors and diagonalization. This course also gives students skills about solving skills Elementary Row Operations (OBE) to obtain the reduced row echelon matrix, inverse matrix, the determinant of the matrix, and the solution SPL. As well as the ability to check whether a set of vectors is constructive and free linear, determine the basis and dimension of the row space, column space, and space solutions, transforming a basis be orthonormal basis, and determine the orthogonal projection of the vector on a plane using the Gramm-Schmidt, determine the kernel and range of a base TL, determine mendiagonalkan matrix a, along the diagonal matrix. And be able to solve a system of differential equations using the concept eigenspace

Daftar Pustaka – Bibliography

Richard Bronson, Gabriel B Costa, John T. Saccoman,"Linear Algebra : Algorithms, Applications and Techniques", 3rd edition, AP Elsevier, 2014

Anton H, Aljabar Linier Elementer, 2004

Steven J Leon, Aljabar Linier dan Aplikasinya,2001

Matematika Diskrit B (FEH2J3)

Discrete Mathematics B (FEH2J3)

Mata kuliah ini memberikan pengetahuan tentang konsep teori himpunan, relasi dan fungsi, dan kombinatorial. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan aplikasi graf dan pohon, serta menghitung kompleksitas algoritma

This course provides knowledge about the concepts of set theory, relations and functions, and combinatorial. This course also gives students skills about the ability to complete the application graphs and trees, as well as calculating algorithm complexity

Daftar Pustaka – Bibliography

Kenneth Rosen, 2011, Discrete Mathematics and Its Applications, 7th Edition, McGraw-Hill Education

Richard Johnsonbaugh, 2015, Discrete Mathematics, 8th Edition, Pearson

Susanna S. Epp, 2010, Discrete Mathematics with Applications, 4th Edition, Brooks Cole

Seymour Lipschutz, 1992, 2000 Solved Problems in Discrete Mathematics, McGraw-Hill Education

Rinaldi Munir, 2010, Matematika Diskrit, Penerbit Informatika

Aljabar Boolean dan Rangkaian Logika (FEH2H3)

Boolean Algebra and Logic Cicuits (FEH2H3)

Mata kuliah ini memberikan kompetensi bidang rangkaian elektronik di dunia digital dengan memperkenalkan transistor digital beserta rangkaian bentukannya (gerbang logika), dilanjutkan dengan sistem bilangan dan aritmetikanya. gerbang logika akan digunakan untuk pembentukan rangkaian aplikasi sesuai fungsinya sekaligus penyederhanaan dengan aljabar boolean dan karnaugh map. dari rangkaian gerbang logika, materi dilanjutkan dengan mesin sekuensial, dimulai dengan pembuatan flip-flop, state diagram, sampai ke performansi dari mesin sekuensial.

This course provides students with the competence in digital electronic circuits by introducing digital transistors including its formation (logic gates), followed by a number system and arithmetic. The logic gates are used for establishing a series of applications according to the functions and also the simplification using the Boolean algebra and Karnaugh map. Then it discusses to sequential machines, starting from the developing flip-flops, state diagrams, to the sequential machine performance.

Daftar Pustaka – Bibliography

M. Rafiquzzaman,"Fundamentals of Digital Logic and Microcontrollers", 6th edition, Jhon Wiley, 2014

A. Saha, N. Manna,"Digital Principles and Logic Design", Infinity Science Press LLC, 2007

Richard F Tinder,"Engineering Digital Design", 2nd edition, AP Academic Press, 2000

Jaringan dan Teknik Penyambungan Telekomunikasi (TTH2A3)

Telecommunication Networks and Switching (TTH2A3)

Mahasiswa akan mempelajari elemen, arsitektur, dan protokol jaringan telekomunikasi wireline, jaringan berbasis paket dan juga dasar-dasar switching digital. Jaringan wire line meliputi arsitektur, signaling PSTN (SS7), pola penomoran dan routing. Jaringan berbasis paket meliputi konsep dasar, Next Generation Network, dan SIGTRAN (SS7 over IP). Pada switching digital meliputi dasar-dasar switching digital, mobile switching, switching softswitch dan Interface serta Protokol softswitch

Students will learn the elements, architecture, and protocols wireline telecommunications networks, packet-based networks and also the basics of digital switching. Wire line networks include architectural, PSTN signaling (SS7), the pattern of numbering and routing. Packet-based network covering basic concepts, Next Generation Network, and SIGTRAN (SS7 over IP). In the digital switching covers the basics of digital switching, mobile switching, switching, interface and Protocol of softswitch.

Daftar Pustaka – Bibliography

Daniel Batu, "New Telecommunication Networks : Enterprise and Security", Wiley, 2014

Hsiao-Hwa Chen and Mohsen Guizani, Next Generation Wireless Systems and Networks, John Wiley & Sons, 2006

Jingming Li Salina and Pascal Salina, Next Generation Networks: Perspectives and Potentials, John Wiley & Sons, 2007

Persamaan Diferensial dan Aplikasi (FEH2I3)

Differential Equations and Applications (FEH2I3)

Mata kuliah ini memberikan pengetahuan tentang persamaan diferensial biasa (pdb), sistem persamaan diferensial biasa, Transformasi Laplace, Deret Fourier, Masalah Nilai batas. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan solusi deret, Masalah Nilai batas, dan metode pemisahan peubah untuk menyelesaikan persamaan panas dalam daerah hingga, dan memperhatikan aspek fisis dari teori yang dibahas, juga interpretasi dan simulasi.

This course provides the knowledge of ordinary differential equations (GDP), a system of ordinary differential equations, Laplace transform, Fourier series, boundary value problem. This course also gives students skills about the ability to complete the series solution, boundary value problem, and the method of separation of variables to solve the heat equation in the area is up and pay attention to the physical aspects of the theory are discussed, as well as interpretation and simulation.

Daftar Pustaka – Bibliography

William E. Boyce, Richard C. DiPrima, 2013, Elementary Differential Equations and Boundary Value Problems, 10th Edition, Wiley

Dennis G. Zill Paperback, 2010, A First Course in Differential Equations with Modeling Applications, 10th Edition, Brooks Cole

C. Henry Edwards, David E. Penney, David T. Calvis, 2014, Differential Equations and Boundary Value Problems: Computing and Modeling, 5th Edition, Pearson Cambridge Texts in Applied Mathematics

James C. Robinson, 2004, An Introduction to Ordinary Differential Equations, Cambridge University Press

Erwin Kreyzig, 2011, Advanced Engineering Mathematics, 10th edition, John Wiley

Rangkaian Listrik (FEH2B4)

Electric Circuits (FEH2B4)

Memberikan pengertian tentang konsep Rangkaian Listrik, mempelajari Hukum Ohm, Hukum Kirchoff, dan aplikasinya baik dalam rangkaian DC maupun ac dengan menggunakan metode analisis dan teorema termasuk didalamnya membahas komponen pasif R, L, C dan komponen aktif sumber tegangan dan arus berikut dibahas nilai besaran-besaran rangkaian listrik, membahas daya pada komponen RLC, frekuensi kompleks dan fungsi transfer berikut aplikasi pada respon frekuensi dan kutub empat, dan kopling magnetik.

Providing an understanding of the concept of Electric Circuits, learn Ohm's Law, Kirchoff's Law, and its application in both the DC and AC circuits using analytical methods and discuss theorems including passive components R, L, C and active components of the source voltage and current values are discussed below besaran- the amount of electrical circuits, discusses the power on RLC components, and the complex frequency transfer function following the application of frequency response and four poles, and magnetic coupling.

Daftar Pustaka – Bibliography

Charles K Alexander, Matthew N.O. Sadiku,"Fundamentals of Electric Circuits", 5th edition, Mc Graw Hill, 2013.

Johnson, David. E, Electric Circuit Analysis, Prentice Hall, London, 2002.

Dorf, Richard, James A. Svoboda, Introduction to Electric Circuit, John Wiley, Sons, 2006

Ramdhani, Mohamad, Rangkaian Listrik, Erlangga, Jakarta, 2008

Hyat, William, Rangkaian Listrik, Erlangga, Jakarta, 1991

Budiono, Mismail, Rangkaian Listrik, ITB, Bandung, 1997

Edminister, J.A., Teori dan Soal-soal Rangkaian Listrik, Erlangga, Jakarta, 1990

Praktikum Teknik Telekomunikasi I (TTH2B1)

Telecommunication Lab Works I (TTH2B1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Rangkaian Listrik, Teknik Digital, Teknik dan Penyambungan Telekomunikasi. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the courses : Electric Circuits, Digital Engineering, Telecommunication Network and Switching. This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

Charles K Alexander, Matthew N.O. Sadiku,"Fundamentals of Electric Circuits", 5th edition, Mc Graw Hill, 2013.

Daniel Batu, "New Telecommunication Networks : Enterprise and Security", Wiley, 2014

M. Rafiquzzaman,"Fundamentals of Digital Logic and Microcontrollers", 6th edition, Jhon Wiley, 2014

Probabilitas dan Statistika (MUH1F3)

Probability and Statistics (MUH1F3)

MK ini membekali mahasiswa kompetensi untuk memahami konsep probabilitas dan besaran statistik: konsep probabilitas yaitu sampel, probabilitas, percobaan, teori himpunan, probabilitas bersyarat dan teorema bayes, kejadian saling bebas, random variables, pdf dan cdf, ekspektasi, dan varians, distribusi spesial: uniform, gaussian, binomial, poisson, erlang. pengantar random proses dan pemodelan random proses (state diagram) pengantar ke statistik dan estimasi distribusi

This course equips students with competencies to understand the concepts of probability and the values in statistics covering the concept of probability namely samples, probability, experiments, set theory, conditional probability and Bayes theorem, independent events, random variables, the pdf and cdf, expectation, and variance. In addition, it discusses special distributions namely uniform, Gaussian, Binomial, Poisson, Erlang, introduction to random processes and random modeling processes (state diagram) to introduce the students to statistics and distribution estimation.

Daftar Pustaka – Bibliography

Douglas C Montgomery, George C Runger ,"Applied Statistics and Probabilty for Engineers", 6th Internal Student Version, John Wiley, 2014

JL Hodges Jr, E.L Lehmann, " Basic Concepts of Probability and Statistics", Classic in Applied Mathemetics, 2004

T.T Song,"Fundamentals of Probability and Statistics For Engineers, 2nd Jhon Wiley, 2004

Variabel Kompleks (FEH2K3)

Complex Variables (FEH2K3)

Mata kuliah ini memberikan pengetahuan tentang sistem bilangan kompleks, fungsi kompleks, keanalitikan dan integrasi, deret fungsi kompleks. Mata kuliah ini juga memberikan keahlian mahasiswa tentang kemampuan menyelesaikan integral kompleks, deret fungsi kompleks, serta residu dan penggunaannya untuk menyelesaikan integral kompeks dan integral real

This course provides knowledge about the system of complex numbers, complex functions, keanalitikan and integration, array of complex functions. This course also gives students skills about the ability to solve complex integrals, series of complex functions, as well as residues and its use to solve real and complex integral

Daftar Pustaka – Bibliography

James Brown, Ruel Churchill, 2013, Complex Variables and Applications, 9th Edition, McGraw-Hill Education

Mark J. Ablowitz, Athanassios S. Fokas, 2003, Complex Variables: Introduction and Applications, 2nd Edition, Cambridge University Press

Joseph Bak, Donald J. Newman, 2010, Complex Analysis, 3rd Edition, Springer

Erwin Kreyszig, Advanced Engineering Mathematics, 10th Edition, Wiley, 2011

Elektromagnetika (FEH2F3)

Electromagnetics(FEH2F3)

Mata kuliah ini memberikan kemampuan pengetahuan mahasiswa tentang teori dan dasar elektromagnetika melalui pemahaman konsep-konsep dan hukum-hukum elektromagnetika. Materi berisi : analisis vektor, meliputi aljabar vektor, kalkulus

vektor, sistem koordinat dan bilangan kompleks sangat diperlukan untuk memahami elektrisitas dan magnetisitas. Konsep persamaan Maxwell dijelaskan mulai dari hukum Gauss, hukum Faraday dan hukum Ampere dalam bentuk integral. Untuk memudahkan pemecahan persoalan kemudian diturunkan ke dalam persamaan Maxwell bentuk diferensial. Sebagai contoh penggunaan persamaan Maxwell adalah analisis gelombang datar uniform pada medium vakum/udara dan medan statis. Karakteristik berbagai jenis bahan (dielektrik, konduktor, bahan magnetis) juga dibahas untuk melihat bagaimana reaksinya terhadap medan elektromagnetika.

This course gives students a working knowledge of basic electromagnetic theory and through understanding the concepts and laws of electromagnetics. The materials contain: vector analysis, including vector algebra, vector calculus, coordinate systems and complex numbers are needed to understand the electricity and magnetisitas. The concept of Maxwell's equations are described from Gauss's law, Faraday's law and Ampere's law in integral form. To facilitate a problem-solving then lowered into the differential form of Maxwell's equations. As an example of using the Maxwell equation is the analysis of uniform plane wave in the medium vacuum / air and static fields. Characteristics of various types of materials (dielectrics, conductors, magnetic materials) are also discussed to see how he reacted to the electromagnetic field.

Daftar Pustaka – Bibliography

Jian Ming Jin," Theory and Computation of Electromagnetics Field", 2nd edition, John Wiley, 2014

Constantine A Balanis, "Advanced Engineering Electromagnetics" Jhon Wiley and Sons, Second Edition, 2012

William H Hyat, John A Buck,"Engineering Electromagnetics", 8th edition Mc Graw Hill, 2012

Pengolahan Sinyal Waktu Kontinyu (FEH2L3)

Continous-Time Signal Processing (FEH2L3)

Mata Kuliah ini memberikan pengetahuan kepada mahasiswa mampu memahami sifat-sifat sinyal dan sistem, mampu menggunakan berbagai transformasi dan penggambaran respons frekuensi dan berbagai plot untuk keperluan analisa sistem. Mahasiswa mampu melakukan perancangan filter analog.

This course provides knowledge to students able to understand the properties of signals and systems, capable of using various transformations and describing the frequency

response and the various plots for analysis system. Students are able to perform the design of analog filters.

Daftar Pustaka – Bibliography

Mark Wickert PhD,"Signals and Systems for Dummies", John Wiley, 2013

Mrinal Mandal, Amir Asif ," Continuous and Discrete Time Signals and systems", Cambridge University Press, 2007

Gerard Blanchet, Maurice Charbit,"Digital Signal and Image Processing using MATLAB, Volume 1 : Fundamentals 2nd edition, Jhon Wiley, 2014

Zahir M Hussein, Amin Z Sadik, Peter O Shea,"Digital Signal processing : An Introduction with Matlab and Applications", Springer, 2011

Jhon W Leis,"Digital Signal Processing using MATLAB for Students and Researchers", Jhon Wiley, 2011

Mikroprosesor (TTH2D3)

Microprocessors (TTH2D3)

Mata kuliah ini memberikan pengetahuan dasar tentang mikroprosesor intel 8088 serta Digital Signal Processor TMS320C. Mata kuliah ini juga memberikan keahlian kepada mahasiswa untuk melakukan pemrograman TMS320C, mendemonstrasikan konsep ADC/DAC, penggunaan Serial Port Interface, perangkat I/O serta interupsi. Kemampuan mahasiswa dalam menganalisis performansi dan implementasi penggunaan DSP Processor TMS320C dapat diperoleh di mata kuliah ini.

This course provides basic knowledge about the Intel 8088 microprocessor and Digital Signal Processor TMS320C. This course also provides skills to students to do programming TMS320C, demonstrating the concept of ADC / DAC, use Serial Port Interface, a device I / O and interrupts. Students' ability to analyze the performance and implementation of the use of DSP Processor TMS320C can be obtained in this course.

Daftar Pustaka – Bibliography

Manuel Jimenez, Rogelio Palomera, Isidoro Couvertier,"Introduction to Embedded Systems using Microcontrollers and the MSP 430", Springer, 2014

Julio Sanchez, Maria P Canton,"Microcontrollers : High Performance Systems and Programming", CRC Press, 2014

EFY Labs,"Microcontroller-Based Project", 2nd edition, EFY Enterprises Pvt Ltd, 2013

Elektronika (FEH2G4)

Electronics (FEH2G4)

Kompetensi yang diberikan pada mata kuliah ini diharapkan sebagai pondasi pada desain elektronika telekomunikasi. Materi yang diberikan adalah sifat elektronika bahan semikonduktor dan pn junction. Pertama mengenai dioda; karakteristik, parameter, model dan penggunaannya. Selanjutnya mengenai karakteristik, parameter dan model transistor bipolar dan unipolar. Untuk implementasi rangkaian berbasis transistor dijabarkan mengenai rangkaian prategangan serta kestabilannya lebih dahulu lalu dilanjutkan dengan pengenalan konfigurasi penguat dasar dan model sinyal kecilnya. Di mata kuliah ini juga dikenalkan implementasi transistor dalam membangun rangkaian gerbang digital. Selanjutnya diperkenalkan respon frekuensi penguat, umpan balik negatif dan kestabilan, op-amp dan aplikasinya, konsep osilator dan konsep penguat daya

This course provides students with the competence in designing electronic telecommunication. It discusses the electronic characteristics of semiconductor materials and PN junction. The first discussion is about diode which explains the characteristics, parameters, models and uses. Then, the discussion moves to the characteristics, parameters, and models of bipolar and unipolar transistors. To implement the transistor-based circuits, the circuit of bias voltage and its stability are discussed before the introduction of basic amplifier configuration and its small signal model. This course also introduces the implementation of transistor to develop a digital gate circuit. Finally, amplifier frequency response, negative feedback and its stability, and Op-Amp and its application, and the concepts of oscillator and power amplifier are discussed.

Daftar Pustaka – Bibliography

Richard C Jaeger, Travis N Blalock,"Microelectronic Circuit Design", 5th edition, Mc Graw Hill, 2016
Behzad Razavi," Fundamentals of Microelectronics", 2nd edition, Jhon Wiley, 2014
Dickon Ross, Cathleen Shamieh, Gordon Mc Comb,"Electronics for Dummies", Jhon Wiley, 2010

Praktikum Teknik Telekomunikasi II (TTH2E1)

Telecommunication Lab Works II (TTH2E1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Sistem Komunikasi, Elektromagnetika, Signal Processing, Jaringan Komputer dan Data. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan

pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the courses : Communication Systems, Electromagnetics, Signal Processing, Computer and Data Networks. This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

Simon Haykin,"Digital Communication Systems", Jhon Wiley and Sons, 2014

William H Hyat, John A Buck,"Engineering Electromagnetics", 8th edition Mc Graw Hill, 2012

Jhon W Leis,"Digital Signal Processing using MATLAB for Students and Researchers", Jhon Wiley, 2011

William Stallings, Data and Computer Communications, 10th Edition, Prentice Hall, 2013.

Sistem Komunikasi (TTH3A4)

Communication Systems (TTH3A4)

Mahasiswa akan mempelajari tentang teori dan prinsip dari sistem komunikasi analog dan digital. Topik terdiri dari pengenalan sistem komunikasi dan subsistem penyusunannya, proses modulasi analog dan digital serta penggambaran spektrum frekuensi, analisis pergeseran spektrum frekuensi, sistem Komunikasi digital beserta sub sistem penyusunnya, indikator kinerja serta rekayasa parameter yang berhubungan dengan indikator kinerja.

Students will learn about the theory and principles of analog and digital communication systems. Topics include introduction to communication systems and subsystems formulation, process analog and digital modulation and the depiction of the frequency spectrum, the analysis shifts the frequency spectrum, digital communication systems and their constituent sub-systems, performance indicators as well as engineering parameters related to performance indicators.

Daftar Pustaka – Bibliography

Simon Haykin,"Digital Communication Systems", Jhon Wiley and Sons, 2014

Ali Grami, " Introduction To Digital Communications", Academic Press (AP) of

Elsevier, 2016

J.G. Proakis and M. Salehi, Fundamentals of Communication Systems, second ed., Pearson , 2014.

Elektromagnetika Telekomunikasi (TTH3B3)

Electromagnetics for Telecommunications (TTH3B3)

Mata kuliah ini mempelajari tentang propagasi gelombang pada berbagai jenis medium yang terkait dengan karakteristik propagasi. Dalam aplikasinya, mata kuliah ini juga menjabarkan proses propagasi pada saluran transmisi, impedansi saluran transmisi serta penyepadanan impedansi.

This course learn about the different types of wave propagation in the medium associated with the propagation characteristics. In its application, this course also describes the process of propagation in transmission lines, transmission line impedance and impedance penyepadanan.

Daftar Pustaka – Bibliography

William H Hyat, John A Buck,"Engineering Electromagnetics", 8th edition Mc Graw Hill, 2012

Jian Ming Jin,"Theory and Computation of Electromagnetics Fields, 2nd edition, Wiley, 2015

Perre Jerry, Jacques N Beneat," RF and Microwave Electromagnetism", Jhon Wiley, 2014

Pengolahan Sinyal Waktu Diskrit (FEH3A3)

Discrete-Time Signal Processing (FEH3A3)

Pemrosesan sinyal dalam sistem waktu diskrit (digital) dapat dilakukan dalam kawasan waktu yang dijabarkan dengan berbagai operasi sinyal, antara lain konvolusi dan korelasi sinyal. Pemrosesan juga dapat dijelaskan dalam kawasan frekuensi dengan memanfaatkan Transformasi Fourier, Transformasi Fourier Diskret, FFT dan transformasi-Z serta transformasi diskrit lainnya yang akan mendukung keperluan analisa-sintesa sistem diskret. Perancangan Filter Digital IIR dan FIR dengan berbagai metode merupakan bentuk analisa-sintesa sistem digital secara konkrit.

Signal processing in a discrete time system (digital) can be done within the time described the various operating signals, among others, convolution and correlation of

signals. Processing can also be explained in a frequency region by using a Fourier transform, discrete Fourier transform, FFT and transformation-Z and other discrete transformation that will support the purposes of analysis-synthesis of discrete systems. Design of Digital IIR and FIR Filter with various methods is a form of analysis-synthesis of digital systems in concrete.

Daftar Pustaka – Bibliography

Mark Wickert PhD,"Signals and Systems for Dummies", John Wiley, 2013

Mrinal Mandal, Amir Asif ," Continuous and Discrete Time Signals and systems", Cambridge University Press, 2007

Gerard Blanchet, Maurice Charbit,"Digital Signal and Image Processing using MATLAB, Volume 1 : Fundamentals 2nd edition, Jhon Wiley, 2014

Zahir M Hussein, Amin Z Sadik, Peter O Shea,"Digital Signal processing : An Introduction with Matlab and Applications", Springer, 2011

Jhon W Leis,"Digital Signal Processing using MATLAB for Students and Researchers", Jhon Wiley, 2011

Jaringan Komunikasi Data (TTH3C3)

Communication Data Networks (TTH3C3)

Jaringan komunikasi data membahas proses komunikasi data antar komputer melalui jaringan komunikasi data. Proses komunikasi melibatkan arsitektur protokol OSI & TCP/IP yang didalamnya dijelaskan aturan, mekanisme dan kemampuan protokol setiap layer. Jaringan komunikasi disusun atas berbagai media transmisi dan perangkat jaringan yang memiliki karakteristik tersendiri.

Data communication networks discuss the process of data communication between computers over a data communications network. The process involves communication protocol architecture OSI and TCP / IP are described therein rules, mechanisms and capabilities of each layer protocols. The communications network is prepared on various transmission media and network device that has its own characteristics.

Daftar Pustaka – Bibliography

William Stallings, Data and Computer Communications, 10th Edition, Prentice Hall, 2013.

Forouzan. Data Communication . 5th edition. Mc Graw-Hill. 2012

Tanenbaum. Computer Network. 5th Edition. Prentice Hall.2010

Pemrograman berbasis Objek (TTH3D3)

Object-Based Programming (TTH3D3)

Mata Kuliah ini mempelajari sejarah dan teknologi Java, fundamental pemrograman Java, Object Oriented Programming di Java, Array dan Matriks di Java, Memahami Alur Program, Membangun Aplikasi, GUI, dan memahami Basis Data di Java.

Subjects of this study history and Java technology, the fundamentals of Java programming, Object Oriented Programming in Java, Arrays and Matrices in Java, Understanding Flow Program, Building Applications, GUI, and understands Database in Java.

Daftar Pustaka – Bibliography

Brett Spell, "Pro Java 8 Programming", Apress, 2015

Raharjo, Budi, Mudah Belajar JAVA, Informatika, 2012.

Teukolsky, Roselyn, Barron's : How to Prepare For The AP Computer Science Advanced Placement Examination Java Version, Barron's, 2003.

Naughton, P., Java Handbook, Osborne, McGraw-Hill Inc, 1996

Sanchez, J. dan Canton, M., JAVA 2 Week End Crash Course, Elex Media Computindo, 2001

Lemay, L. and Perkins, C.L. Teach Yourself Java in 21 Days, Sams Net, Inidiana, 1996

Kewirausahaan (DUH2A2)

Entrepreneurship (DUH2A2)

Matakuliah Kewirausahaan ini adalah matakuliah dengan kosentrasi pada Business Plan yang dapat diimplementasikan oleh mahasiswa selama satu semester. Mahasiswa dalam tiap tahapan belajar akan mengkaji pokok bahasan Pengertian Kewirausahaan, Motivasi, Inovasi, Kepemimpinan, Kreativitas, Pengembangan Ide, Kerja Sama, Negoisasi – Relasi Usaha, Business Plan, dan Praktik Business Plan yaitu merancang dan mengevaluasi business plan.

Entrepreneurship course this is subject to the concentration in the Business Plan that can be implemented by a student for one semester. Students in each stage study will examine the subject of Understanding Entrepreneurship, Motivation, Innovation, Leadership, Creativity, Idea Development, Cooperation, Negotiations - Business Relations, Business Plan, and Practice Business Plan is to design and evaluate the

business plan.

Daftar Pustaka – Bibliography

Ir. Hendro, MM, ***Dasar-dasar Kewirausahaan***, Penerbit Erlangga 2011

John C. Maxwell, ***The Five Level of Leadership***, MIC 2014

Deepak Malhotra, ***I Move Your Cheese***, MIC 2014

Tim Kick Andy, ***Kreativitas Tanpa Batas***, Bentang Pustaka2014

John C. Maxwell, ***Teamwork Makes The Dream Work: Wujudkan Impian Besarmu***, MIC 2015

Robby I. Chandra, ***Serial Perjalanan Kepemimpinan: Kamu Juga Bisa!***, Young Leaders Indonesia 2010

Praktikum Teknik Telekomunikasi III (TTH3E1)

Telecommunication Lab Works III (TTH3E1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Elektronika dan Microprocessor. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the courses : Electronics and Microelectronics. This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

Behzad Razavi," Fundamentals of Microelectronics", 2nd edition, Jhon Wiley, 2014

Manuel Jimenez, Rogelio Palomera, Isidoro Couvertier,"Introduction to Embedded Systems using Microcontrollers and the MSP 430", Springer, 2014

Julio Sanchez, Maria P Canton,"Microcontrollers : High Performance Systems and Programming", CRC Press, 2014

Studium General (FEH2D2)

Studium Generale (FEH2D2)

Mata kuliah ini memberikan wawasan terkini kepada mahasiswa terkait isu – isu di bidang ICT, lingkungan, politik, hukum, ekonomi, sosial dan budaya. Diharapkan agar mahasiswa dapat memanfaatkan wawasan tersebut untuk mengaplikasikan ICT di bidang- bidang tersebut serta mengetahui dampak penerapannya.

This course provides the latest insights to the students related issues in the field of ICT, environmental, political, legal, economic, social and cultural. It is expected that students can take advantage of that insight to apply ICT in these areas and know the effects of its application.

Daftar Pustaka – Bibliography

Jyrki T.J Penttinen, "The Telecommunication Handbook", Jhon Wiley, 2015

Daniel B. Botkin, Edward A. Keller,"Environmental Science : Earth as Living Planet, 9th edition, Jhon Wiley, 2014

Daniel Batu, "New Telecommunication Networks : Enterprise and Security", Wiley, 2014

Antena dan Propagasi (TTH3G3)

Antenna and Propagation (TTH3G3)

Mahasiswa akan mempelajari tentang teori dan prinsip desain antena, hingga aspek propagasi gelombang elektromagnetika dan desain link komunikasi terestrial. Topik yang diajarkan meliputi: karakteristik antena (diagram arah, diagram fasa, gain/direktivitas, konsep aperture, polarisasi, impedansi antena, dan temperatur antena), macam-macam antena, konsep antena susunan, cara mengukur berbagai karakteristik antena, mampu merancang antena untuk berbagai aplikasi dan mengatahui karakteristik perambatan gelombang dalam berbagai lingkungan (terestrial, ionosfer, stratosfer, troposfer, ruang angkasa dan permukaan bumi)

Students will learn about the theory and principles of antenna design, to aspects of electromagnetic wave propagation and terrestrial communications link design. Topics taught include: antenna characteristics (diagram direction, phase diagram, gain / directivity, concept aperture, polarization, antenna impedance and temperature antenna), various antennas, the concept of the antenna array, how to measure various characteristics of the antenna, capable of designing an antenna for various applications

and know the characteristics of wave propagation in various environments (terrestrial ionosphere, stratosphere, troposphere, space and the earth's surface)

Daftar Pustaka – Bibliography

Constantine A Balanis,"Antenna Theory : Analysis and Design , 4th edition, Jhon Wiley 2016

William H Hyat, John A Buck,"Engineering Electromagnetics", 8th edition Mc Graw Hill, 2012

KRAUSS, J.D., "Antennas for All Aplications", McGraw Hill Int, New York, 2002.

Sistem Komunikasi Optik (TTH3H3)

Optic Communication Systems (TTH3H3)

Mata kuliah kami mengenalkan konsep-konsep spesifik pada komunkasi optik. Topik-topiknya meliputi: perbandingan sistem komunikasi optik dengan sistem komunikasi konvensional, propagasi cahaya pendekatan geometrik dan gelombang elektromagnetik, karakteristik dan jenis serat optik, degradasi sinyal optik, kopel daya optik, komponen optik aktif dan pasif, perencanaan link digital dan analog

Our courses introduce specific concepts in optical communications. Topics include: comparison of optical communication systems with conventional communication systems, propagation of light and electromagnetic waves geometric approach, characteristics and type of optical fiber, optical signal degradation, coupling optical power, active and passive optical components, digital and analog link planning.

Daftar Pustaka – Bibliography

Shiva Kumar, M. Jamal Deen, "Fiber Optic Communication: Fundamentals and Application", WIley, 2014

Keiser, G., Optical Fiber Communications, 3rd Ed., Mc Graw-Hill, 2000.

Senior John M, Optical Fiber Communications, Prentice Hall Inc, 2nd Ed, 1992

Spirit, D. M & O' Mahony, M. J., High Optical Transmission Explained, John Wiley & Sons Ltd, 1995.

Shimada, S. & Ishio, H., Optical Amplifiers and Their Applications, John Wiley & Sons

Ltd, 1994.

Elektronika Telekomunikasi (TTH3I3)

Telecommunication Electronics (TTH3I3)

Kuliah ini memberikan kemampuan pengetahuan mahasiswa tentang desain elemen-elemen dalam pemancar dan penerima sistem komunikasi yang meliputi desain penguat daya, filter, osilator, phase locked loop dan mixer. Pertimbangan dalam mendesain adalah faktor kualitas, kestabilan dan aspek kinerja yang dihasilkan.

This lecture gives students a working knowledge of the design elements of the transmitter and receiver communication system which includes design power amplifier, filter, oscillator, phase locked loop and mixer. Considerations in the design is the quality factor, stability and performance aspects generated.

Daftar Pustaka – Bibliography

David M Pozar, “Microwave Engineering”, Jhon Wiley and Sons, fourth edition 2013

Samuel Y Liao,”Microwave Circuit Analysis and Amplifier Design, Prentice Hall 1987

I.A. Glover, S.R. Pennock, P.R . Shepherd,”Microwave Devices, Circuits And Subsystems For Communications Engineering,” Jhon Wiley, 2005

Keamanan Jaringan (TTH3K3)

Network Security (TTH3K3)

Memberikan pengetahuan mengenai aplikasi praktis keamanan jaringan telekomunikasi secara umum yang dapat dipelajari melalui konsep dasar dan teori kriptografi (simetrik dan asimetrik), contoh standar industri, analisis algoritma pertukaran kunci, pemodelan otentikasi, fungsi one-way dan hash, konsep dan sistem serangan tiap lapisan protokol, sistem pertahanan untuk tujuan keamanan jaringan.

Provide knowledge about practical application security telecommunication networks in general can be learned through the basic concepts and theory of cryptography (symmetric and asymmetric), examples of industry standards, analysis of key exchange algorithm, modeling authentication, the function of one-way and hash, concepts and system attacks every layer protocol, defense system for network security purposes.

Daftar Pustaka – Bibliography

W. Stallings, Cryptography and Network Security, 6th ed., Prentice Hall, 2014

Katz, J., Lindell, Y., Introduction to Modern Cryptography, Chapman & Hall, 2008

R. Anderson, Security Engineering (A Guide to Building Dependable Distributed Systems), 2nd ed., John Wiley & Sons, 2008

Katz, J., Lindell, Y., Introduction to Modern Cryptography, Chapman & Hall, 2008

Ekonomi Teknik B (FEH2E2)

Engineering Economics B (FEH2E2)

Mempelajari proses pengambilan keputusan atas alternatif di bidang rekayasa dan bisnis dengan pertimbangan/kriteria ekonomi. Mengenalkan proses atau model pengambilan keputusan di bidang rekayasa. Mempelajari konsep *time value of money*, konsep bunga (*interest*), *cash flow diagram*, ekivalensi (*Present Worth, Annual Worth, Future Worth*). Mempelajari metode-metode analisis sebagai dasar perbandingan alternatif (analisis: PW; AW/EUA; FW; IRR; BCR; *Pay back period*; *Incremental*). Menjelaskan metode – metode depresiasi, konsep pajak, analisis cash flow setelah pertimbangan pajak dan depresiasi. Mempelajari analisis investasi dengan pertimbangan sensitivitas dan ketidakpastian. Mempelajari analisis replacement.

Study the decision-making process on alternatives in engineering and business considerations / economic criteria. Introduce process or model of decision-making in the field of engineering. Studying the concept of time value of money, the concept of interest, cash flow diagram, the equivalence (Present Worth, Annual Worth, Future Worth). Studying the methods of analysis as a basis for comparison of alternative (analysis: PW; AW / EUA; FW; IRR; BCR; Pay back period; Incremental). Explaining the method - the method of depreciation, tax concept, analysis of cash flow after tax considerations and depreciation. Studying the investment analysis with consideration of sensitivity and uncertainty. Studying the replacement analysis.

Daftar Pustaka – Bibliography

Bilal M Ayyub,"Risk Analysis in Engineering and Economics", CRC Press, 2014

Pedro Franco," Understanding Bitcoin : Criptography, Engineering and Economics", Jhon Wiley, 2014

Sullivan, Wicks, Luxhoj, "Engineering Economy", 12th Edition, Pearson Education, Inc., 2003, New Jersey, USA

Grant, Ireson, Levenworth, " Dasar-Dasar Ekonomi Teknik", PT Rineka Cipta, 2001, Jakarta

Thuesen, G.J. & Fabrycky, W.J., " Engineering Economy", 9th Edition, Prentice Hall,

Inc., 2001, New Jersey, USA

DeGarmo, Sullivan, Bontadelli, Wicks, "Engineering Economy", Tenth Edition, Prentice Hall, Inc., 1997, New Jersey, USA

Newnan, Donald G., "Engineering Economic Analysis", Engineering Press,Inc., 1992, California, USA Grant, Ireson, Leavenworth, "Principles of Engineering Economy", John Wiley&Sons, 1990, Singapore

Praktikum Teknik Telekomunikasi IV (TTH3F1)

Telecommunication Lab Works IV (TTH3F1)

Mata kuliah praktikum ini membantu mahasiswa dalam memahami teori dan mengetahui aplikasi yang didapatkan pada kuliah Antena, Sistem Komunikasi Optik, Elektronika Komunikasi dan Keamanan Jaringan. Praktikum ini juga memberikan ketrampilan mahasiswa dalam merencanakan eksperimen, melakukan pengukuran, pengambilan data serta menganalisis data yang dihasilkan dan membuat kesimpulan terhadap eksperimen yang telah dilakukan.

This lab works assists students in understanding the theory and application obtained at the courses : Antenna and Propagation, Optical Communication, Communications Electronics and Network Security. This lab works also gives students skills for planning the experiment, measurement, data collection and analyzes the resulting data and make conclusions from the experiments.

Daftar Pustaka – Bibliography

Constantine A Balanis,"Antenna Theory : Analysis and Design , 4th edition, Jhon Wiley 2016

Shiva Kumar, M. Jamal Deen, "Fiber Optic Communication: Fundamentals and Application", WIley, 2014

David M Pozar, "Microwave Engineering", Jhon Wiley and Sons, fourth edition 2013

W. Stallings, Cryptography and Network Security, 6th ed., Prentice Hall, 2014

Sistem Komunikasi Seluler (TTH4H3)

Celluler Communication Systems (TTH4A3)

Memberikan kemampuan mahasiswa tentang perencanaan jaringan wireless seluler generasi kedua, ketiga dan keempat. Aspek perencanaan meliputi kapasitas dan

coverage. Perencanaan diawali dengan memprediksi demand pelanggan dan jenis layanan. Perencanaan dibantu dengan alat bantu software untuk meningkatkan kemampuan mahasiswa dalam penggunaan software perencanaan.

Giving students the ability of planning second generation cellular wireless networks, third and fourth. Aspects of planning includes capacity and coverage. Planning begins by predicting customer demand and the type of service. Planning assisted with software tools to improve students' ability to use planning software.

Daftar Pustaka – Bibliography

Nishith D Tripathi, Jeffrey H.Reed,"Celluler Communications : A Comprehensive and a Practical Guide", Jhon Wiley, 2014

Jirky T Penttinen,"The Telecommunications Handbook : Engineering Guidelines for Fixed, Mobile and satellite Systems", Jhon Wiley, 2015

Morten Tolstrup,"Indoor Radio Planning : A Practical Guide for 2G,3G and 4G", Jhon Wiley, 2015

Manajemen Proyek (FEH3C3)

Project Management (FEH3C3)

Kuliah ini mempelajari hubungan antara manajemen proyek, manajemen operasi dan strategi secara organisasi serta bisnis yang terkandung dalam manajemen proyek. Mahasiswa juga dibekali dengan aturan, prosedur dan kemampuan sebagai manajemen proyek. Kuliah ini memberikan kemampuan komunikasi dan kerjasama dalam tim.

This study looks at the relationship between project management, operations management and strategy as well as business organizations contained in project management. Students are also provided with the rules, procedures and capabilities as project management. This lecture provides communication and cooperation within the team.

Daftar Pustaka – Bibliography

Project Management Institute," A Guide To The Project Management Body Of Knowledge (PM BOK Guide)", 5th edition, Project Management Institute Inc, 2013

Project Management Institute," Organizational Project Management Maturity ", 3rd edition, Project Management Institute Inc, 2013

Project Management Institute," The Standard For Portfolio Management", 3rd edition,

Project Management Institute Inc, 2013

PenulisanKarya Ilmiah dan Seminar (FEH4A2)

Scientific Writing and Proposal (FEH4A2)

Matakuliah ini bertujuan membantu mahasiswa dalam menyiapkan rencana penelitiandalam tugas akhirnya. Selama proses ini, mahasiswa diarahkan dalam menyusun proposal penelitian dari tahap pemilihan topik sampai dengan penulisan rencana penelitian kedalam proposal. Pada akhir perkuliahan, masing-masing mahasiswa mempresentasikan proposal tugas akhirnya dalam forum kelas.

This courseis to help students prepare their final project/research proposal. This course guides students to write research proposals from selecting research topics to writing their research plans in proposals. By the end of the course, each student is required to present their final project proposal to the class.

Daftar Pustaka – Bibliography

Alexander M. Novikov, Dmitry A. Movikov,"Research Methodology : From Philosophy of Science to Research Design", CRC Press, 2013

Loraine Blaxter, Christina Hughes and Malcolm Tight," How To Research", 4th edition, Mc Graw Hill, 2010

Pat Cryer,"The Research Student's Guide to Success", 3rd edition. Mc Graw Hill, 2006

Thomas E. Ogden,"Research Proposals : A guide to Success", 3rd edition, Academic Press Elsevier, 2002

Tugas Akhir (TTH4B4)

Final Project (TTH4B4)

Mata Kuliah ini merupakan implementasi dari perencanaan yang dilakukan di kuliah Penulisan Karya Ilmiah dan Proposal. Mahasiswa melakukan penelitian kecil dalam bentuk Tugas Akhir dan dibimbing oleh dua pembimbing. Pada akhir kuliah, laporan Tugas Akhir akan diuji oleh tiga penguji untuk mengklarifikasi penelitian kecil yang telah dilakukan.

This Course is an implementation of the planning done in the course Scientific Writing and Proposal. Students do a little research in the form of final project and guided by two tutors. At the end of the lecture, final report will be examined by three examiners to clarify the little research that has been done.

Daftar Pustaka – Bibliography

Alexander M. Novikov, Dmitry A. Movikov,"Research Methodology : From Philosophy of Science to Research Design", CRC Press, 2013

Loraine Blaxter, Christina Hughes and Malcolm Tight," How To Research", 4th edition, Mc Graw Hill, 2010

Pat Cryer,"The Research Student's Guide to Success", 3rd edition. Mc Graw Hill, 2006

Thomas E. Ogden,"Research Proposals : A guide to Success", 3rd edition, Academic Press Elsevier, 2002

Geladi (DUH2B2)

Basic on Job Training (DUH2B2)

Pada program ini, mahasiswa dikenalkan sedini mungkin tentang ruang lingkup pekerjaan di bidang ICT di perusahaan mitra. Mahasiswa melakukan beberapa perkerjaan kecil agar mahasiswa lebih mengenal ruang lingkup pekerjaan mereka ketika lulus dari universitas. Mahasiswa dibimbing oleh pembimbing akademik dan pembimbing lapangan. Pada akhir program, mahasiswa membuat laporan tertulis dan akan dinilai oleh pembimbing akademik dan pembimbing lapangan.

In this program, students are introduced as early as possible about the scope of work in the field of ICT in the partner company. Students do several small jobs to make students more familiar with the scope of their employment when graduating from university. Students are guided by counselors and tutors field. At the end of the program, students make a written report and will be assessed by counselors and tutors field.

Kerja Praktek (FEH3B2)

Internship (FEH3B2)

Pada program ini, mahasiswa melakukan pekerjaan yang sesuai dengan keahlian bidang ICT di perusahaan multinasional. Melalui program ini mahasiswa diharapkan dapat meningkatkan kemampuan keterampilannya, kemampuan berkomunikasi dan kemampuan bekerja sama. Mahasiswa mencari lokasi tempat kerja praktek dan dibimbing oleh pembimbing akademik serta pembimbing lapangan. Pada akhir program, mahasiswa membuat laporan tertulis dan akan dinilai oleh pembimbing akademik dan pembimbing lapangan.

In this program, the students do the work in accordance with expertise in the field of ICT in multinational companies. Through this program, students are expected to improve their skills, communication skills and ability to cooperate. Students find the

location of workplace practices and guided by counselors and tutors field. At the end of the program, students make a written report and will be assessed by counselors and tutors field.

Steganografi & Watermarking (TTH4Q3)

Steganography and Watermarking (TTH4Q3)

Mata Kuliah ini mempelajari bagaimana menyisipkan atau menyembunyikan informasi pada suatu konten multimedia. Konten multimedia yang dimaksud adalah audio dan citra. Penyisipan informasi yang dilakukan mempertimbangkan persepsi manusia terhadap audio dan citra, baik audibilitas pendengaran maupun visibilitas penglihatan manusia. Jenis watermarking dijelaskan pada mata kuliah ini berdasarkan metode transformasi yang dilakukan dan berdasarkan domain apa disisipkannya data. Metode penyisipan yang dilakukan bervariasi, antara lain : LSB, kuantisasi, penjumlahan, dan modulasi. Disampaikan pula serangan yang biasa terjadi pada konten multimedia watermarking/steganografi serta parameter performansi yang digunakan pada proses watermarking dan steganografi.

Subjects have to learn how to insert or hide information on a multimedia content. Multimedia content in question is audio and image. Insertion of information that will be considering the human perception of audio and image, both audibilitas hearing and visibility of human vision. Watermarking type described in this course is based on the transformation method is done and what domain based disisipkannya data. The method of insertion is done varies, among others: LSB, quantization, summation, and modulation. He then explained that the attacks are common in multimedia content watermarking / steganography and performance parameters used in the watermarking and steganography.

Daftar Pustaka – Bibliography

Yiqing and W. H. A. Lin, Audio Watermark, A Comprehensive Foundation Using Matlab. Auckland: Springer, 2015.

P. Wayner, Disappearing Cryptography Information Hiding: Steganography and Watermarking. 2009.

I. J. Cox, M. L. Miller, J. a Bloom, T. Kalker, and J. Fridrich, “Digital Watermarking and Steganography Second Edition,” p. 624, 2008.

Computer Vision (TTH4P3)

Computer Vision (TTH4P3)

Mahasiswa akan memahami macam-macam Kamera, cahaya dan warna, teknik filtering, deteksi tepi, deteksi sudut, ekstraksi ciri, grouping dan fitting, geometric vision, recognition dan machine learning, face detection dan recognition, object detection, part-based model, deep learning, extended kalman filter, particle filter, online multiple instance learning, augmented reality, dan 3D object.

Students will learn about Cameras, light and color, technique filtering, edge detection, angle detection, feature extraction, grouping and fitting, geometric vision, recognition and machine learning, face detection and recognition, object detection, part-based models, deep learning, extended Kalman filter, particle filter, multiple instances of online learning, augmented reality, and 3D objects.

Daftar Pustaka – Bibliography

Reinhard Klette,"Concise Computer Vision : Introduction into Theory and Algorithms", Springer 2014

Szeliski, R. Computer Vision: Algorithms and Applications, Springer, 2010

Parker, J, R., Algorithm For Image Processing and Computer Vision, John Wiley and Son, 2010

Speech Processing (TTH4O3)

Speech Processing (TTH4O3)

Kuliah ini mempelajari berbagai macam aplikasi Pemrosesan sinyal suara digitaldisertai pengolahansuara atau pola pengenalan suara. Untuk memahami implementasi praktis dari sinyal suara atau teknik pengenalan suara, kuliah ini juga memberikan konsep pengolahan suara digital dan pengenalan pola. Kuliah ini bertujuan memberikan pengetahuan tentang konsep pengolahan sinyal suara dan penegnalan pola. Kuliah ini berkaitan dengan konsep pengolahan suara seperti speech production model, speech feature extraction, speech compression dll, dan konsep pengenalan pola dasar yang diterapkan untuk sinyal speech.

This course learns the most of the applications of digital speech processing deal with speech or speaker pattern recognition. To understand the practical implementation of the speech or speaker recognition techniques, this course also gives the concepts of digital speech processing and the pattern recognition. This course aims in giving the balanced treatment of both the concepts. This course deals with speech processing concepts like speech production model, speech feature extraction, speech compression,

etc., and the basic pattern recognition concepts applied to speech signals.

Daftar Pustaka – Bibliography

K. Sreenivasa Rao, Anil Kumar Vuppala, "Speech Processing in Mobile Environments", Springer, 2014

Mohamed Hesham Farouk,"Application of Wavelets in Speech Signal Processing," Spriger, 2014

E.S. Gopi,"Digital Speech Processing using Matlab", Springer, 2014

Koding dan Kompresi (TTH4N3)

Coding and Compression (TTH4N3)

Mahasiswa akan mempelajari tentang teori dan prinsip dasar dari pengkodean dan kompresi. Topik mata kuliah terdiri dari pengantar kompresi data, teori informasi dasar untuk Lossless Coding: kuantitas informasi, entropi, Kraft-McMillan Inequality, Prefix- Free Code; teknik-teknik kompresi untuk lossless coding: Huffman Coding, Golomb dan Tunstall Code, Arithmetic Coding, Dictionary Technique, RLE dan BW Transform; pengantar kompresi lossy, kuantisasi skalar dan vektor pada teks dan citra.

Students will learn about the theory and the basic principles of encoding and compression. Topics course consists of introductory data compression, information theory basis for Lossless Coding: the quantity of information, entropy, Kraft-McMillan Inequality, Prefix- Free Code; techniques for lossless compression coding: Huffman Coding, Golomb and Tunstall Code, Arithmetic Coding, Dictionary Technique, RLE and BW Transform; introduction lossy compression, scalar and vector quantization in text and image.

Daftar Pustaka – Bibliography

Yo Sung Ho,"Advanced Video Coding for Next Generation Multimedia Services," In Tech Publishing, 2013

Adam Drozdek, Elements of Data Compression, Thomson Brooks/Cole, 2002

Khalid Sayood, Introduction to Data Compression, Academic Press, 2000.

Aplikasi Bergerak (TTH4M3)

Mobile Applications (TTH4M3)

Mahasiswa akan mempelajari sejarah dan teknologi aplikasi mobile, overview

Android, Persiapan Pemrograman Android, Konsep Dasar Pemrograman Android yang terdiri dari : User Interface, Activity, Widget, Debugging, Array, Matriks, Akses File Data, Image, Audio. Target pada Mata Kuliah ini adalah Pembuatan Pemrograman Aplikasi Android yang terdiri dari : Akses Database Lokal (SQLite), dan Database Server (MySQL) via bahasa Pemrograman PHP dengan studi kasus Pengiriman data teks dan file baik dari Client ke Server (Upload) maupun Server ke Client (Download) yang ditengahi dengan proses di server sebelum hasilnya dikirimkan ke client, baik berupa teks maupun file.

Students will learn about the history and technology of mobile applications, overview of Android, Android Programming Preparation, Basic Concepts Programming Android comprising: User Interface, Activity, Widget, Debugging, Array, Matrix, Access Data File, Image, Audio. Target on Subjects are Making Application Programming Android consists of: Access Local Database (SQLite), and Database Server (MySQL) via the programming language PHP with case studies Delivery of text data and files either from Client to Server (Upload) or Server to client (Download) brokered by the process on the server before the results are sent to the client, either text or files.

Daftar Pustaka – Bibliography

J.D. Glaser ,"Secure Development for Mobile Applications : How To Design and Code Secure Mobile Applications with PHP and Java Script", CRC Press 2014

Mark Reynolds,"Xamarin Mobile Application Development for Android," PACKT Publishing 2014

Nazruddin Safaat, Android : pemrograman aplikasi mobile smartphone dan tablet pc berbasis android, 2012

Komunikasi Optik Lanjut (TTH4L3)

Advanced Optic Communications (TTH4L3)

Kuliah ini mempelajari tentang sejarah sistem komunikasi optik, kelebihan dan kekurangannya dibandingkan sistem komunikasi lain, kemudian dipaparkan elemen-elemen yang membentuk sistem komunikasi optik. Selanjutnya membahas mengenai teknologi dan aplikasi jaringan optik baik trunk (OTN) maupun akses termasuk komponennya, seperti Multipleks, Optical Cross Connect, Wavelength Converter, SONET, SDH, FTTX, PON, GPON, GEPON.

This study looks at the history of optical communication systems, the advantages and disadvantages compared to other communication systems, and then exposed to the elements that make up the optical communication system. Furthermore, discusses the

technology and application of good trunk optical network (OTN) and includes access components, such as Multiplex, Optical Cross Connect, Wavelength Converter, SONET, SDH, FTTX, PON, GPON, GEPON.

Daftar Pustaka – Bibliography

Jane M Simmons,"Optical Network Design and Planning", Springer, Second edition, 2014

Helvoort, Huub Van; Next Generation Optical Transport, SDH/SONET/OTN, John Wiley and Sons, 2009

Ramaswami, Rajiv & Sivarajan, Kumar & Sasaki, Galen; Optical Network, A Practical Perspective, 3rd Ed., 2009

Radar, Navigasi dan Remote Sensing (TTH4K3)

Radar, Navigation and Remote Sensing (TTH4K3)

Kuliah ini berkaitan dengan kemampuan mahasiswa untuk mengenali sistem Radar, navigasi dan remote sensing serta dapat memahami persamaan yang terkait dengan radar. Kuliah ini juga memperkenalkan perangkat lunak dan perangkat keras dari Radar beserta aplikasinya. Parameter Radar seperti jarak dan jarak non ambigu yang dihasilkan suatu Radar juga dikenalkan dalam kuliah ini.

This lecture deals with the ability of students to recognize Radar systems, navigation and remote sensing as well as be able to understand the equations associated with radar. This lecture also introduces the software and hardware of the radar and its applications. Radar parameters such as distance and distance non ambiguous produced a radar also introduced in this lecture.

Daftar Pustaka – Bibliography

Bassem R Mahafza," Radar Systems Analysis and Design using Matlab", CRC Press, 2013

Merrill Skolnik,"Radar Handbook", 3rd edition, Mc Graw Hill, 2008

Merrill Skolnik,"Introduction to Radar Systems", Mc Graw Hill, 2001

Raffaele Persico,"Introduction To Ground Penetration Radar", Jhon Wiley, 2014

John A Richards,"Remote Sensing Digital Image Analysis", Springer, 2014

Sistem Komunikasi Satelit (TTH4J3)

Sattelite Communication Systems (TTH4J3)

Sistem Komunikasi Satelit berkaitan dengan kemampuan mahasiswa untuk mengenali komunikasi lewat satelit dan sifat-sifatnya, termasuk parameter yang terkait serta kendalanya. Melalui diskusi/latihan yang diberikan mahasiswa akan mampu untuk merancang dan menganalisa sistem komunikasi satelit yang tepat untuk suatu kondisi/kebutuhan khusus untuk trafik yang menyebar.

Satellite Communication Systems regarding the ability of students to recognize the communication by satellite and its properties, including relevant parameters and constraints. Through discussion / exercises provided the students will be able to design and analyze satellite communication system appropriate for a condition / special needs for traffic spread.

Daftar Pustaka – Bibliography

Anil K Maini, Varsa Agrawal,"Satellite Technology : principles and Applications" 3rd edition, Jhon Wiley 2014

Roger Cochetti,"Mobile satellite Communications Handbook", 2nd edition, Jhon Wiley 2014

Zhili Sun,"Satellite Networking : Principles and Protocol", 2nd edition, Jhon Wiley 2014

Rekayasa Radio (TTH4I3)

Radio Engineering (TTH4I3)

Mahasiswa akan mempelajari tentang prinsip perencanaan, desain, penggelaran sistem radio microwave. Topik terdiri dari pengenalan jaringan transmisi, prinsip sistem microwave, desain dan perencanaan link dan kapasitas jaringan microwave serta rekayasa parameter kualitas dan kapasitas pada jaringan microwave.

Students will learn about the principles of planning, designing, deploying microwave radio systems. Topics include introduction of the transmission network, the principle of microwave systems, the design and planning of microwave links and network capacity and the engineering parameters of the quality and capacity of the microwave network.

Daftar Pustaka – Bibliography

George Kizer, Digital Microwave Communiction : Engineering Point to Point Microwave Systems, IEEE Press Wiley, 2013

Harvey Lehpamer, Microwave Tranmission Networks : Planning, Design and

Deployment, Communication Engineering, 2010

Freeman, Roger L, Fundamental of Telecommunications., John wiley & Sons, Inc, 2005

Freeman, Roger L, Radio System Design for Telecomm. (1-100 GHz), John wiley & Sons, Inc, 2001

Rappaport, Theodore S, Wireless Comm., Principles and Practice, Prentice Hall, 1996

Haykin, Simon, Communication System, John Wiley & Sons, Inc, 1995

Komunikasi Nirkabel Pita Lebar (TTH4H3)

Broadband Wireless Communications (TTH4H3)

Kuliah ini mempelajari tentang teknik komunikasi lanjut untuk mengirimkan aplikasi dan layanan broadband. Teknik – teknik tersebut adalah MIMO, Cognitive Radio, Software Defined Radio, Cooperative Communication dan Scheduling. Ruang lingkup materi adalah : Sistem pembangun, cara kerja teknik – teknik tersebut, aspek kapasitas dan kualitas.

This lecture learn about advance communication techniques to deliver applications and broadband services. This techniques include : MIMO, Cognitive Radio, Software Defined Radio, Cooperative Communication and Scheduling. The scope of topics on each method are : the system builder, the workings of the technique, capacity and quality aspect.

Daftar Pustaka – Bibliography

Mario Marques Da Silva, Francisco A Monteiro,"MIMO Processing for 4G and Beyond : Fundamental and Evolution", CRC Press, 2014

Zhengguo Sheng, Chi Harold Liu,"Energy Efficient Cooperative Wireless Communication and Networks",CRC Press, 2015

Badr Benmammar, Asma Amraoui,"Radio Resource Allocation and Dynamic Spectrum Access", Jhon Wiley, 2013

Maria Stella Iacobucci,"Reconfigurable Radio Systems : Network Architectures and Standards",Jhon Wiley 2013

Jonathan Rodriguez,"Fundamentals of 5G Mobile Networks" Jhon Wiley, 2015

Model dan Simulasi Jaringan Komunikasi (TTH4G3)

Model and Simulation of Communication Networks (TTH4H3)

Kuliah ini mempelajari tentang pengenalan jaringan wireless adhoc dan infrastructure, cara memodelkannya, serta mensimulasikannya dengan software simulator jaringan yang non-berbayar pada layer fisik, datalink, network, maupun transport.

This subject studies about the introduction of wireless ad hoc networks and infrastructure, how to model and simulate the network simulator software are non-paid on the physical, datalink, network, and transport.

Daftar Pustaka – Bibliography

Subir Kumar Sarkar, T.G Basavaraju, C. Puttamadapa,"Adhoc Mobile Wireless Networks : Principles, Protocols and Applications", second edition, CRC Press, 2013

Salim Bitam, Abdelhamid Mellouk,"Bio Inspired Routing Protocol s for Vehicular Ad Hoc Networks", Jhon Wiley, 2014

A. Law and W. Kelton, Simulation Modeling and Analysis, McGraw-Hill, 2001

J Chung and M. Claypool, NS by Example, www.nile.wpi.edu/NS, Last Access 5 February 2004

Computer Networking, A Top-Down Approach Featuring the Internet, J. F. Kurose and K. W. Ross, Addison Wesley, 2003

Jaringan Nirkabel (TTH4F3)

Wireless Networks (TTH4F3)

Mata Kuliah ini bertujuan untuk memberikan penjelasan mengenai pengenalan konsep dasar sistem wireless broadband dengan sudut pandang lapis ke-2 ke atas serta pencarian perkembangan teknologi terkait : standarisasi wifi, wimax dan LTE; Fungsi transmisi dan protokol wifi, wimax dan LTE

This course aims to provide an explanation regarding the introduction of the basic concepts of broadband wireless systems with a view to tier-2 and above as well as technological developments related search : standardization wifi, wimax and LTE; Transmission functions and protocols wifi, wimax and LTE

Daftar Pustaka – Bibliography

Cox, Christopher, "An Introduction to LTE: LTE, LTE-Advanced, SAE, VoLTE and 4G Mobile Communications", John Wiley & Sons, second edition 2014

David D, Coleman and David A, Westcott, "CWNA: Certified Wireless Network

Administrator Official Study Guide",John Wiley & Sons , 2009

Andrews, Jeffrey G. and Ghosh, Arunabha, "Fundamentals of WiMAX: Understanding Broadband Wireless Networking", Prentice Hall, 2007

Sofware Defined Network (TTH4E3)

Sofware Defined Network (TTH4E3)

Kuliah ini memberikan pengetahuan mahasiswa tentang keterbatasan teknologi jaringan saat ini dan pengembangan kearah Software Defined Network (SDN) untuk mengatasasi keterbatasan tersebut. Interface dan protocol pada SDN dan penjelasan fungsi control plane yang dimplementasikan pada sistem SDN diberikan pada kuliah ini. Sifat openness pada protocol juga dijelaskan pada kuliah ini. Alternatif implementasi SDN dan keterbatasan implementasi dari SDN juga dibahas.

These lectures give students knowledge about the limitations of current network technology and development towards Software Defined Network (SDN) to overcome these limitations. Interface and protocol on SDN and explanation of control plane functions are implemented on the system SDN given in this lecture. The nature of openness in the protocol is also explained in this lecture. SDN implementations and limitations of alternative implementations of SDN also discussed.

Daftar Pustaka – Bibliography

Paul Goransson and Chuck Black,"Software Defined Networks: A Comprehensive Approach", Elsevier, 2014

Patricia A Morreale and james M. Anderson,"Software Defined Networking : Design and Deployment", CRC Press, 2015

Thomas D Nadeau and Ken Gray,"Software Defined Networks", O'reilly media Inc, 2013

New Generation Network (TTH4D3)

New Generation Networks(TTH4D3)

Kuliah ini mempelajari tentang pengenalan jaringan baru masa depan, arsitektur NGN, layer transport, layer control, protocol penunjang dari NGN, konsep dasar dari evolusi NGN, layanan yang dapat diberikan NGN, aspek security, mengenalkan konsep new generation network, long term evolution, IP Multimedia Subsystem, carrier system, aspek kualitas dari layanan dan regulasi telekomunikasi

This subject studies about the introduction of a new network of the future, NGN architecture, the Transport layer, layer control, protocol support of NGN, the basic

concept of the evolution of NGN, the service can be provided NGN, aspects of security, introduces the concept of new generation networks, Long Term Evolution, IP Multimedia Subsystem, carrier system, aspects of quality of service and telecommunications regulation

Daftar Pustaka – Bibliography

Jonathan Rodriguez,"Fundamentals of 5G Mobile Networks", Jhon Wiley 2015

Daniel Batu,"New Telecom Networks : Enterprise and Security", Jhon Wiley 2014

LTE for UMTS – OFDMA and SC-FDMA Based Radio Access April 2009

Regulating the Telecommunications_ICT Sector Overview_2012

Rekayasa Jaringan (TTH4C3)

Network Engineering (TTH4C3)

Rekayasa Jaringan bertujuan untuk mempertajam kemampuan mahasiswa dalam menerapkan teori didalam merancang dan meningkatkan performansi jaringan; termasuk mengarahkan mahasiswa untuk melakukan percobaan dan eksplorasi teknologi rekayasa jaringan, seperti protokol routing, protokol akses, protokol transport, kemampuan mengukur performansi jaringan serta menggunakan alat bantu analisis (simulator)

Engineering Network aims to improve the ability of students to apply the theory in the design and improves network performance; including directing students to perform experiments and exploration of tissue engineering technology, such as routing protocols, access protocols, transport protocols, the ability to measure network performance as well as the use of analysis tools (simulator)

Daftar Pustaka – Bibliography

End-to-End QoS Network Design: Quality of Service for Rich-Media & Cloud Networks (2nd Edition). Szigeti, Tim.Christina Hattingh, Robert Barton, Kenneth Briley Junior. 2014

Computer Networks, 5th Edition : A System Approach (The Morgan Kaufmann Series in Networking), 2012

Pioro Michal, Routing,Flow and Capacity Design in Communication and Computer Network, Morgan Kaufmann Publishers, 2004

Michael Welzl, "Network Congestion Control : Managing Internet Traffic", Jhon Wiley& Sons, 2005