INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS
DEPARTEMEN TEKNIK ELEKTRO
Program Studi Sarjana (S1) Teknik Elektro

INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FACULTY OF INTELLIGENT ELECTRICAL & INFORMATICS TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
Bachelor Degree Program in Electrical Engineering

1	**Nama Mata Kuliah / *Course Name***	:	Manajemen Proyek Telekomunikasi / *Telecommunication Project Management*
2	**Kode Mata Kuliah / *Course Code***	:	EL234601
3	**Kredit / *Credits***	:	2 SKS
4	**Semester / *Semester***	:	6

Deskripsi Mata Kuliah / *Course Description*

Mata kuliah Manajemen Proyek Telekomunikasi membahas manajemen proyek di bidang telekomunikasi yang berhubungan dengan desain dan/atau rekayasa terhadap sistem dan jaringan telekomunikasi. / *The Telecommunication Project Management course covers project management in the field of telecommunications related to the design and/or engineering of telecommunication systems and networks.*

Capaian Pembelajaran Lulusan (CPL) Yang Dibebankan Mata Kuliah / *Program Learning Outcomes Charged to The Course*

CPL 1	Mampu menunjukkan sikap dan karakter yang mencerminkan: ketakwaan kepada Tuhan Yang Maha Esa, etika dan integritas, berbudi pekerti luhur, peka dan peduli terhadap masalah sosial dan lingkungan, menghargai perbedaan budaya dan kemajemukan, menjunjung tinggi penegakan hukum mendahulukan kepentingan bangsa dan masyarakat luas, melalui kreatifitas dan inovasi, ekselensi, kepemimpinan yang kuat, sinergi, dan potensi lain yang dimiliki untuk mencapai hasil yang maksimal / *Being able to demonstrate attitudes and characteristics that reflect: devotion to the One Almighty God, ethics and integrity, noble virtues, sensitivity and care towards social and environmental issues, appreciation of cultural diversity and inclusivity, upholding the rule of law with a priority on the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.*

CPL 5	Mampu mendesain komponen, sistem, dan proses yang logis dan realistis sesuai dengan spesifikasi yang ditentukan dengan mempertimbangkan aspek keselamatan, sosial, budaya, lingkungan, dan ekonomi / *Able to design components, systems, and processes that are logical and realistic in accordance with specified specifications, while considering safety, social, cultural, environmental, and economic aspects.*
CPL 8	Mampu bekerja secara efektif lintas disiplin dan budaya dengan menunjukkan sifat kepemimpinan, dan mampu mendefinisikan tujuan, rencana kerja, dan capaian / *Able to work effectively across disciplines and cultures by demonstrating leadership qualities and the ability to define goals, work plans, and achievements.*

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*

1. Mampu menjelaskan metode optimasi/rekayasa sistem dan jaringan telekomunikasi / *Able to explaining optimization methods/engineering for telecommunication systems and networks.*
2. Mampu menjelaskan prinsip-prinsip manajemen proyek telekomunikasi dalam industri telekomunikasi / *Able to explain project management principles for the telecommunications industry.*
3. Mampu secara berkelompok menyusun TOR, proposal proyek telekomunikasi / *Able to collaboratively developing Terms of Reference (TOR) and telecommunications project proposals as a group.*
4. Mampu secara berkelompok menggagas, merancang, dan/atau melaksanakan proyek yang bermanfaat bagi masyarakat, membuat laporan proyek dan pemperesentasikannya. / *Able to collaborate, plan, and/or execute projects beneficial to the community, create project reports, and present them.*

Pokok Bahasan / *Contents*

1. Arsitektur industri telekomunikasi / *Telecommunication Industry Architecture*
2. Rekayasa dan Optimasi Sistem dan Jaringan Komunikasi / *Communication System and Network Engineering and Optimization*
3. Proyek, Manajemen Proyek, Work Breakdown Structure / *Projects, Project Management, Work Breakdown Structure*
4. Penjadwalan dengan CPM dan Cash Flow / *Scheduling with CPM and Cash Flow*
5. Manajemen Risiko, Organisasi Proyek / *Risk Management, Project Organization*
6. Tahap-tahap persiapan, pelaksanaan, dan pelaporan proyek / *Project Preparation, Execution, and Reporting Stages*
7. Tinjauan Kasus-kasus / *Case Studies*
8. Penulisan TOR dan/atau proposal proyek / *Writing Terms of Reference (TOR) and/or Project Proposals*

Prasyarat / *Pre-requisite*

Jaringan Komunikasi Data, Elektronika Komunikasi, Sistem Komunikasi / *Data Communication Networks, Telecommunication Electronics, Communication Systems*

Pustaka / *Reference*

1. Hamdy A. Taha, Operations Research: An Introduction, ed. 10, Prentice Hall, 2016.
2. Bernard Sklar, Digital Communications Fundamentals and Applications, ed. 3, Pearson, 2021.
3. Mostafa H. Sherif, Managing Projects in Telecommunication Services, John Wiley and Sons, 2007.
4. Celia L. Desmond, The ComSoc Guide to Managing Telecommunications Projects, Wiley-IEEE Press, 2011.

COURSE	Name	: Telecommunication System Engineering and Project
	Code	: EE184935
	Credits	: 3
	Semester	: Elective

Description of Course

The subject of System Engineering and Telecommunications Project Management addresses two interconnected topics. First, students learn about systems engineering methods and telecommunications networks in connection with real problems, with the mastery of the knowledge that has been gained from the courses in telecommunications that have been taken before. After that, students learn about the methods of planning and managing projects in the field of telecommunications, related to the implementation of the results of system engineering and telecommunications networks studied in the first topic of discussion.

Learning Outcomes

Knowledge

(P03) Mastering the concepts and principles of design procedure in power systems, control systems, multimedia telecommunications, or electronics.

(P04) Mastering the concepts, principles, and procedures which considers economical, social, and environment aspects in power systems, control systems, multimedia telecommunications, or electronics.

Specific Skill

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

(KK02) Able to describe the completion of engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

(KK03) Able to describe system design for problem solving in power systems, control systems, multimedia telecommunications, or electronics by concerning technical standards, performace aspect, reliability, ease of application, and assurance of sustainability.

General Skill

(KU05) Able to take decisions appropriately in the context of problem solving in the area of expertise based on the results of information and data analysis.

(KU07) Able to take responsibility for the achievement of group work and supervise and evaluate the work completion assigned to the worker under his/her responsibility.

Attitude

(S11) Trying his/her best to achieve perfect results.

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the concepts, principles and procedures of engineering and optimization of telecommunication systems and networks.

Mastering project management concepts, principles and procedures in the telecommunications sector.

Specific Skill

Able to do engineering and optimization of telecommunication systems and networks in solving problems related to the telecommunications sector.

Able to apply project management in implementing projects in the telecommunications sector.

General Skill

Able to make decisions regarding telecommunication systems and networks which are the optimal solutions in solving telecommunication problems.

Able to work together and carry out joint responsibility for the results of group work in telecommunications engineering and optimization and in project management.

Attitude

Work professionally in achieving optimal telecommunication systems and networks and in implementing project management.

Cooperate in groups to engineer and optimize telecommunications systems and networks and carry out project management.

Main Subjects

1. Telecommunications Technology as a Solution
2. Optimization Method
3. Rekyasa and Optimization of Communication Systems and Networks
4. Project and Project Management
5. Work Breakdown Structure
6. Scheduling and Cash Flow
7. Risk Management
8. Project Organization
9. Project Proposal

Reference(s)

[1] Hamdy A. Taha, "Operations Research An Introduction", ed. 8, Prentice Hall, 2007.
[2] Bernard Sklar, "Digital Communications Fundamentals and Applications", ed. 2, Prentice Hall, 2001.
[3] Sharon Evans, "Telecommunications Network Modeling, Planning and Design", IEE, 2003
[4] Mostafa H. Sherif, "Managing Projects in Telecommunication Services", John Wiley and Sons, 2007.
[5] Celia L. Desmond, "Project Management for Telecommunications Managers", Kluwer Academic Publishers, 2004.

Prerequisite(s)

EE184531 Communication Systems I
EE184532 Electromagnetic Wave Transmission and Antennas
EE184533 Networks and Traffic Engineering