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

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

1	**Nama Mata Kuliah / *Course Name***	:	Layanan dalam Jaringan / *Services over Networks*
2	**Kode Mata Kuliah / *Course Code***	:	EL234706
3	**Kredit / *Credits***	:	3 SKS
4	**Semester / *Semester***	:	3

Deskripsi Mata Kuliah / *Course Description*

Mata kuliah Layanan Dalam Jaringan membahas penyediaan layanan dalam jaringan, jenis dan karakteristik layanan, arsitektur sistem penyedia layanan dalam internet, kualitas layanan dan rekayasa jaringan. / *Services over Networks course discusses the provision of in-network services, types and characteristics of services, service provider system architecture on the internet, service quality and network engineering.*

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

1. (CPL-05) Mampu merancang 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 logical and realistic components, systems, and processes in accordance with the specified specifications by considering safety, social, cultural, environmental, and economic aspects.*
2. (CPL-07) Mampu mengidentifikasi, memformulasikan, menganalisis, dan menyelesaikan permasalahan kompleks di bidang teknik telekomunikasi. / *Able to identify, formulate, analyze, and solve complex problems in telecommunication engineering.*
3. (CPL-08) Mampu mengetahui dan mengaplikasi metode dan keahlian sesuai perkembangan terkini di bidang ilmu pengetahuan dan teknologi untuk menyelesaikan permasalahan di bidang Teknik Telekomunikasi dengan mengedepankan nilai-nilai universal. / *Able to know and apply methods and expertise according to the latest developments in the field of science and technology to solve problems in the field of Telecommunication Engineering by prioritizing universal values.*

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*

1. Menguasai konsep penyediaan layanan. / *Master the concept of service provision.*

2. Menguasai dan memahami arsitektur sistem penyedia layanan dalam internet. / *Mastering and understanding the architecture of service provider systems on the internet.*
3. Menguasai Implementasi arsitektur infrastruktur penyedia layanan. / *Mastering the implementation of service provider infrastructure architecture.*
4. Menguasai Kinerja dan kualitas layanan dalam jaringan. / *Mastering the performance and quality of service in the network.*
5. Menguasai pengukuran dan evaluasi kualitas layanan dalam jaringan internet. / *Mastering the measurement and evaluation of service quality in internet networks.*

Pokok Bahasan / *Contents*

1. Penyediaan layanan dalam jaringan, termasuk jenis dan karakteristik layanan. / *Provision of in-network services, including types and characteristics of services.*
2. Arsitektur sistem penyedia layanan dalam internet. / *System architecture of in-net service providers*
3. Implementasi arsitektur infrastruktur penyedia layanan dalam skala kecil. / *Implementation of service provider infrastructure architecture on a small scale.*
4. Kinerja dan kualitas layanan dalam jaringan. / *Performance and quality of service in the network.*
5. Pengukuran dan evaluasi kualitas layanan dalam jaringan internet. / *Measurement and evaluation of quality of service in internet networks.*

Prasyarat / *Pre-requisite*

Elektronika Telekomunikasi, Jaringan Komunikasi Nirkabel / *Telecommunication Electronics, Wireless Communication Networks*

Pustaka / *Reference*

1. Oliver Heckman, the Competitive Internet Service Provider, John Willey & Sons, 2006
2. Floris van den Broek, Management of Internasional Networks, CRC Press, 2000
3. K. Sharon Evans, Telecommunications Network Modelling, Planning and Design, The Institution of Engineering and Technology, 2004
4. Ramin Sadre, Scalability of Neworks and Services, Springer, 2009.
5. Aileen Cater-Steel, Information Technology Governance and Service Management: Framework and Adaptations, Information Science Reference, 2009
6. Tim Szigeti et al, End to End QoS Network Design, Cisco Press, 2014