	Universitas Negeri Surabaya Faculty of Engineering, Undergraduate Study Program in Informatics Engineering	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Network Design, Management and Analysis	5520203071		T=3	P=0	ECTS=4.77	5	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Aditya Prapanca, S.T., M.Kom.

Learning model	**Project Based Learning**
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**
	Program Objectives (PO)
	PLO-PO Matrix

	P.O

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description	This course studies network management concepts, Network Management Architecture, IP and Subneting Management, User and Group Management, Routing, Bandwidth Management, Traffic Analysis, SNMP, MRTG, and log analysis.
References	**Main :**

1. Oppenheimer, Priscilla. 2010. Top-Down Network Design. USA: Cisco Press.
2. Clemm, Alexander. 2007. Network Management Fundamentals. USA: Cisco Press.
3. ____. 2001. Network Administration. USA: Concurrent Computer Corporation.
4. McCabe, James D. 2007.Network Analysis Architecture and Design. USA:Morgan Kaufmann Publishers.

	Supporters:
Supporting lecturer	Agus Prihanto, S.T., M.Kom.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Students are able to understand the concept of network management in terms of definition and function	1. Explains Network performance definition. 2. Describes the flow process components 3. Examining the functions and roles of network management.		Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			0%
2	Students are able to understand IP Management, Subnetting (CIDR) and IPv6 concepts	1. Explain the concept of IP management. 2. Applying IP addressing to a computer network case study. 3. Applying subnetting to a case study. 4. Explain and design addressing with the CIDR concept. 5. Explain addressing with the IPv6 protocol		Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			0%
3	Students are able to understand IP Management, Subnetting (CIDR) and IPv6 concepts	1. Explain the concept of IP management. 2. Applying IP addressing to a computer network case study. 3. Applying subnetting to a case study. 4. Explain and design addressing with the CIDR concept. 5. Explain addressing with the IPv6 protocol	**Form of Assessment** : Participatory Activities	Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			25%
4	Understand how Routing works and apply static and dynamic routing configurations.	1. Explain the concept and function of routing 2. Describe how static and dynamic routing works 3. Explain the difference between static and dynamic routing 4. Implementing static routing configuration, with a case study 5. Implementing dynamic routing configuration with a case study		Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			0%

5	Understand how Routing works and apply static and dynamic routing configurations.	1. Explain the concept and function of routing 2. Describe how static and dynamic routing works 3. Explain the difference between static and dynamic routing 4. Implementing static routing configuration, with a case study 5. Implementing dynamic routing configuration with a case study	**Form of Assessment** : Participatory Activities	Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			25%
6	Understand file management concepts and implement file management	1. Explains the concept of file management 2. Identify user access rights 3. Implement management and file sharing in Windows 4. Implementing file management and sharing using Samba Linux		Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			0%
7	Understand file management concepts and implement file management	1. Explains the concept of file management 2. Identify user access rights 3. Implement management and file sharing in Windows 4. Implementing file management and sharing using Samba Linux		Approach: Scientific Model: Cooperative Method: Discussion, Presentation 2 X 50			0%
8	Sub-Summative Exam	Sub-Summative Exam		2 X 50			0%
9	Students understand the needs in network design	1. Students can mention the need for network devices. 2. Students can state network specification requirements. 3. Students can mention network application needs.		Approach: Scientific Model: Project-based learning Method: Discussion, Presentation 2 X 50			0%

10	Students are able to understand the stages of network requirements analysis	1. Students explain the process of capturing user needs. 2. Students state the content of the requirements specification document. 3. Students can carry out the needs networking process.		Approach: Scientific Model: Project-based Learning Method: Discussion, Presentation 2 X 50			0%
11	Students are able to understand the stages of network requirements analysis	1. Students explain the process of capturing user needs. 2. Students state the content of the requirements specification document. 3. Students can carry out the needs networking process.		Approach: Scientific Model: Project-based Learning Method: Discussion, Presentation 2 X 50			0%
12	Students can explain the components of network monitoring.	1. Students can explain in simple terms the definition of the SNMP protocol. 2. Students can explain the working principles of the SNMP protocol. 3. Students can simply operate the SNMP application.		Approach: Scientific Model: Project-based Learning Method: Discussion, Presentation 2 X 50			0%
13	Students can explain the components of network monitoring.	1. Students can explain in simple terms the definition of the SNMP protocol. 2. Students can explain the working principles of the SNMP protocol. 3. Students can simply operate the SNMP application.	**Form of Assessment** : Participatory Activities	Approach: Scientific Model: Project-based Learning Method: Discussion, Presentation 2 X 50			50%

14	Students can create a logical design of network topology	1. Students tell the definition of the Flat LAN model. 2. Students explain the concept of the Hierarchical Topology model. 3. Students explain the concept of the Meshnetwork model.		Approach: Scientific Model: Project-based Learning Method: Discussion, Presentation 2 X 50			0%
15							0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	100%
		100%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.