



**Universitas Negeri Surabaya
Faculty of Engineering,
Electrical Engineering Masters Study Program**

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date																																	
Multimedia Wireless Networks	2010102020		T=2 P=0 ECTS=4.48	2	July 17, 2024																																	
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator																																		
	Unit Three Kartini, S.T., M.T., Ph.D.																																		
Learning model	Case Studies																																					
Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																					
	PLO-4	Develop yourself continuously and collaborate.																																				
	PLO-6	Able to deepen or expand knowledge in the field of electrical engineering to provide original and proven contributions through research with an interdisciplinary or multidisciplinary approach, formulate new ideas (new research questions) in the field of electrical engineering from the results of research carried out for the development of science and technology in the field of engineering																																				
	Program Objectives (PO)																																					
	PLO-PO Matrix																																					
		<table border="1" style="margin: auto;"> <tr> <td style="width: 20%;">P.O</td> <td style="width: 20%;">PLO-4</td> <td style="width: 20%;">PLO-6</td> <td colspan="3"></td> </tr> </table>					P.O	PLO-4	PLO-6																													
P.O	PLO-4	PLO-6																																				
PO Matrix at the end of each learning stage (Sub-PO)																																						
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 5%;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 3%;">1</td> <td style="width: 3%;">2</td> <td style="width: 3%;">3</td> <td style="width: 3%;">4</td> <td style="width: 3%;">5</td> <td style="width: 3%;">6</td> <td style="width: 3%;">7</td> <td style="width: 3%;">8</td> <td style="width: 3%;">9</td> <td style="width: 3%;">10</td> <td style="width: 3%;">11</td> <td style="width: 3%;">12</td> <td style="width: 3%;">13</td> <td style="width: 3%;">14</td> <td style="width: 3%;">15</td> <td style="width: 3%;">16</td> </tr> </table>					P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																						
Short Course Description	Multimedia wireless networks is a course that teaches a description of the development of multimedia technology. Students can explain multimedia wireless networks and design multimedia wireless network protocols and understand multimedia wireless network management. Students can find out the problems in multimedia wireless networks from security factors and attacks from outside parties.																																					
References	Main :																																					
	<ol style="list-style-type: none"> 1. 1. Aura Ganz, Zvi Ganz, and Kittiwongthavarawat, "Multimedia Wireless Network: Technologies, Standards, and QoS", Bernard Goodwin, 2004. 2. 2. Parag Havaladar and Gerard Madioni, "Multimedia System: Algorithms, Standards, and Industry Practice", Course Technology, Canada, 2010. 3. 3. K.R. Rao, et al., "Wireless Multimedia Communication System: Design, Analysis, and Implementation", CNC Press, Francis, 2014. 																																					
	Supporters:																																					
	<ol style="list-style-type: none"> 1. 4. Pedro José Marrón, Kamin Whitehouse, "Wireless Sensor Networks", Lecture Notes in Computer Science, Springer, 2011. 																																					
Supporting lecturer	Dr. Nurhayati, S.T., M.T.																																					
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	Describes an overview of multimedia wireless networks	1. Describe the basic concepts of multimedia wireless networking 2. Explain the development of multimedia wireless networks	Criteria: 1. Can describe the basic concepts of multimedia wireless networks 2. Can explain the development of multimedia wireless networks Form of Assessment : Participatory Activities, Tests		On line		5%
2	Describes an overview of multimedia wireless networks	1. Describe the basic concepts of multimedia wireless networking 2. Explain the development of multimedia wireless networks	Criteria: 1. Can describe the basic concepts of multimedia wireless networks 2. Can explain the development of multimedia wireless networks Form of Assessment : Participatory Activities, Tests		Online 2x50'		5%
3	Demonstrates multimedia wireless networking technology	1. Explains WiFi, Bluetooth, LTE and 5G technology 2. Case study of the use of video streaming and voice calling technology.	Form of Assessment : Participatory Activities		Online 2x50'		10%
4	Demonstrates multimedia wireless networking technology	1. Explains WiFi, Bluetooth, LTE and 5G technology 2. Case study of the use of video streaming and voice calling technology.	Form of Assessment : Participatory Activities		Online 2x50'		5%
5	Identify communication protocols in multimedia wireless networks	1. Understand access control protocols in multimedia wireless networks, 2. Understand CSMA/CA technology	Forms of Assessment : Participatory Activities, Practice/Performance, Tests		Online 2x50'		5%

6	Identify communication protocols in multimedia wireless networks	<ol style="list-style-type: none"> 1. Understand access control protocols in multimedia wireless networks, 2. Understand CSMA/CA technology 	Forms of Assessment : Participatory Activities, Practice/Performance, Tests		Online 2x50'		5%
7	Understand how to manage multimedia wireless network resources	<ol style="list-style-type: none"> 1. Understand capacity management 2. Understand QoS management 3. Explain QoS quality of service algorithm techniques 	Forms of Assessment : Participatory Activities, Portfolio Assessment, Tests		On line		5%
8	Understand how to manage multimedia wireless network resources	<ol style="list-style-type: none"> 1. Understand capacity management 2. Understand QoS management 3. Explain QoS quality of service algorithm techniques 	Forms of Assessment : Participatory Activities, Portfolio Assessment, Tests		On line		5%
9	UTS						0%
10	Analysis of wireless network management		Criteria: Tasks, participation Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment		online 2x50'		5%
11	Analysis of wireless network management	<ul style="list-style-type: none"> • Conduct case study analysis by understanding journals or management patterns of a multimedia wireless network 	Criteria: Tasks, participation Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment		online 2x50'		5%
12	Understanding of multimedia wireless network security		Criteria: participation, assignments, presentations Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment		on line		10%
13	Understanding of multimedia wireless network security	Describe several internal and external attacks on multimedia wireless networks	Criteria: participation, assignments, presentations Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment		on line		10%

14	Case study of multimedia wireless network security	• Conduct case studies and provide solutions related to attacks on multimedia wireless network security	Criteria: task Form of Assessment : Project Results Assessment / Product Assessment		online 2x50'		15%
15	Case study of multimedia wireless network security	• Conduct case studies and provide solutions related to attacks on multimedia wireless network security	Criteria: task Form of Assessment : Project Results Assessment / Product Assessment, Portfolio Assessment		online 2x50'		9%
16	UAS						19%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	41.68%
2.	Project Results Assessment / Product Assessment	34.5%
3.	Portfolio Assessment	7.84%
4.	Practice / Performance	3.34%
5.	Test	11.68%
		99.04%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.