



Universitas Negeri Surabaya
Faculty of Engineering
, Information Technology Education Undergraduate Study
Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																																										
Mobile Computing	8320703034		T=3	P=0	ECTS=4.77	5	July 17, 2024																																										
AUTHORIZATION		SP Developer		Course Cluster Coordinator		Study Program Coordinator																																											
			Drs. Bambang Sujatmiko, M.T.																																											
Learning model	Project Based Learning																																																
Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																																
	PLO-8	Mastering the concepts and implementation in developing software engineering, games, intelligent multimedia, and network computer engineering.																																															
	PLO-13	Able to develop innovative educational products or learning resources using scientific design-based strategies to support teaching activities that can be integrated with ICT.																																															
	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-8</td> <td style="width: 20%;">PLO-13</td> <td colspan="4"></td> </tr> </table>						P.O	PLO-8	PLO-13																																							
P.O	PLO-8	PLO-13																																															
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: 5%;">1</td> <td style="width: 5%;">2</td> <td style="width: 5%;">3</td> <td style="width: 5%;">4</td> <td style="width: 5%;">5</td> <td style="width: 5%;">6</td> <td style="width: 5%;">7</td> <td style="width: 5%;">8</td> <td style="width: 5%;">9</td> <td style="width: 5%;">10</td> <td style="width: 5%;">11</td> <td style="width: 5%;">12</td> <td style="width: 5%;">13</td> <td style="width: 5%;">14</td> <td style="width: 5%;">15</td> <td style="width: 5%;">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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Short Course Description	This course discusses the concept of wireless networks, technology in wireless networks, their development and implementation of wireless networks including: the basics of wireless transmission and communication, types of wireless network technology which are included in wireless personal area networks (WPAN), wireless local area networks (WLAN), wireless Metropolitan area network (WWAN), Wireless network topology and infrastructure, and Security in Wireless Networks.																																																
References	Main :																																																
	<ol style="list-style-type: none"> 1. Fette B, Aiello R, Chandra P, Dobkin D M, Bensky A, Miron D, Lide D. A, Dowl F, Olexa R. 2008. RF & Wireless Technologies: Know It All. Elsevier. 2. Garg Vijay, 2007, Wireless Communication and Networking, Morgan Kaufmann. 3. Rappaport Theodore S, Wireless Communications Principles and Practice: Second Edition, Prentice Hall. 4. Purbo. Onno W, 2007, Jaringan Wireless di Dunia Berkembang. 																																																
	Supporters:																																																
Supporting lecturer	Agus Prihanto, S.T., M.Kom. Hafizhuddin Zul Fahmi, S.Kom., M.Sc.																																																
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 know and can describe advances in wireless telecommunications, the internet and computer equipment and applications that are part of mobile computing	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	Lectures and Impressions			0%
2	Students know the definition, development and applications of mobile computing	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	Lectures and Impressions			0%
3	Students know and understand the role of devices used in mobile computing in terms of capabilities and size	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	Lectures and Impressions			0%
4	Understand networking and Cloud services.	Able to explain the use of networks and cloud services in supporting mobile device applications.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	Gagne Instructional Activity Learning			0%
5	Students can explain the differences between traditional distributed system types and their development on mobile systems, such as: Ad Hoc, Nomadic, & Ubiquitous	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	lectures and shows			0%
6	Students know the properties of signals and their characteristics including their use efficiently and effectively (transmission media utilization)	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	lectures and shows			0%
7	Students know the properties of signals and their characteristics including their use efficiently and effectively (transmission media utilization)	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	lectures and shows			0%
8	Midterm exam						0%
9	Students know the history and development of wireless technology, data access methods, and the differences between wireless networks and fixed networks	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation. Form of Assessment : Participatory Activities	lectures and shows			0%

10	Students are able to compute position and direction (navigation) based on several approaches.	Number of reference quotes/elements discussed, correctness of calculations) and student participation	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation Form of Assessment : Participatory Activities	lectures and shows			0%
11	Students are able to complete assignments such as writing articles, program development projects, discussions and so on.	Accuracy of analysis, neatness of presentation, creativity of ideas, communication skills, participation and presentation, quantitative: number of reference quotes/elements discussed, correctness of calculations	Criteria: Accuracy of analysis, neatness of presentation, creativity of ideas, communication skills, participation and presentation, quantitative: number of reference quotes/elements discussed, correctness of calculations Form of Assessment : Participatory Activities	FGD, Project Based, Self Learning and Impressions			0%
12	Students understand various applications that use RFID devices.	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation.	lectures and shows			0%
13	Students understand various applications that use NFC devices		Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation Form of Assessment : Participatory Activities	lectures and shows			0%
14	Students understand the various types and basics of RFID architecture.	Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Criteria: Number of reference quotes/elements discussed, correctness of calculations) and student participation.	Lectures and Impressions			0%
15	Students are able to create and present assignments about mobile computing applications/systems based on: mathematical calculations or scene (landmark) analysis.	Accuracy of analysis, neatness of presentation, creativity of ideas, communication skills, participation and presentation, quantitative: number of reference quotes/elements discussed, correctness of calculations	Criteria: Accuracy of analysis, neatness of presentation, creativity of ideas, communication skills, participation and presentation, quantitative: number of reference quotes/elements discussed, correctness of calculations	FGD, Project Based, Self Learning and Impressions			0%
16	Final exams						0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
		0%

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.

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.