



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																																	
Cloud Computing	8320703033		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-left: auto; margin-right: auto;"> <tr> <td style="width: 10%;">P.O</td> <td style="width: 15%;">P.O</td> <td style="width: 15%;">PLO-8</td> <td style="width: 15%;">PLO-13</td> <td colspan="2"></td> </tr> </table>					P.O	P.O	PLO-8	PLO-13																												
P.O	P.O	PLO-8	PLO-13																																			
PO Matrix at the end of each learning stage (Sub-PO)																																						
	<table border="1" style="margin-left: auto; margin-right: 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	This course teaches the concepts of virtualization, managing virtual machines, virtual storage, virtual networks, remote virtual machines, as well as implementing virtual machines with VirtualBox, Wmware Workstation and VMware ESXi.																																					
References	Main :																																					
	1. Escalante, Armando. 2010. Handbook of Cloud Computing. Springer 2. Onno W. Purbo, 2011. "Petunjuk Praktis Cloud Computing Menggunakan Open Source", http://kambing.ui.ac.id/onnopurbo/ebook/ebook-voip/OWP-20110701-petunjuk-praktis-cloud-computing-menggunakan-opensource.pdf Gabriel Canepa, 2016. "VirtualBox Essential", http://www.ilmujaringan.com/download/virtualbox-essentials/?wpdmdl=2696 Masim Vavai Sugianto, 2016. "Instalasi & Konfigurasi VMware vSphere 5.5", PT. EXCELENT INFOTAMA KREASINDO																																					
	Supporters:																																					
Supporting lecturer	Aditya Prapanca, S.T., M.Kom. I Gusti Lanang Putra Eka Prisma, S.Kom., 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	Get to know virtualization technology	<ol style="list-style-type: none"> 1. Get to know the uses of virtualization 2. Get to know virtualization terminology 3. able to mention virtualization features 4. able to name an OS that supports virtualization 5. Get to know VirtualBox and extension packs 		Lecture Discussion 2 X 50			0%
2	Mastering Wave Theory	<ol style="list-style-type: none"> 1. Know the components that make up a wave (Frequency, Amplitude and Wavelength) 2. Mention the characteristics of waves (Absorption, Reflection, Disfraction, Refraction, Interference and Noise) 		Lecture Discussion Creating a 2 X 50 resume			0%
3	Able to Manage Virtual Machines	<ol style="list-style-type: none"> 1. Able to create VM Groups 2. Able to create Snapshoots 3. Able to do Configuration 4. Able to do cloning 5. Able to do Removing 6. Able to import & export 7. Able to do Global settings 		Lecture Discussion Practice 2 X 50			0%
4	Able to configure VMs	<ol style="list-style-type: none"> 1. capable of configuring 64 bit guests 2. able to emulate hardware 3. able to do General Settings 4. able to configure system settings 5. able to configure Display settings 6. able to configure Storage settings 7. able to configure Network settings 		Lecture Discussion Practice 2 X 50			0%
5	Installing Guest Additions	<ol style="list-style-type: none"> 1. Introduction 2. Installing and Maintaining Guest Additions 3. Shared folders 4. Drag and Drop 5. Hardware-accelerated graphics 6. Seamless windows 		Lecture Discussion Practice 2 X 50			0%

6	Mastering the Use of Virtual Storage	<ol style="list-style-type: none"> 1. Get to know Hard disk controllers 2. Get to know disk image files 3. Get to know The Virtual Media Manager 4. Get to know Special image write modes 5. Getting to know differentiating images 6. Able to clone disk images 7. Understanding Host I/O caching 8. Knowing Limiting bandwidth for disk images 9. Know how to use CD/DVD 10. Know the types of iSCSI servers 		LectureDiscussionPractice 2 X 50		0%
7	Mastering the Use of Virtual Networking	<ol style="list-style-type: none"> 1. Get to know Virtual networking hardware 2. Know each networking mode 3. Able to configure Network Address Translation (NAT) 4. Able to configure using Bridged networking 5. Able to configure Internal networking 6. Able to configure Host-only networking 7. Able to configure UDP Tunnel networking 8. Able to configure VDE networking 9. Limiting bandwidth for network I/O 10. Improving network performance 		LectureDiscussionPractice 2 X 50		0%
8	UTS			2 X 50		0%

9	Remote Virtual Machines	<ol style="list-style-type: none"> 1. know how to use Remote display (VRDP) 2. Ampu uses third-party RDP viewers 3. Knowing the function of VboxHeadless, the remote desktop server 4. master how to create a virtual machine on a headless server 5. Master how to Remote USB 6. master how to RDP authentication 7. master how to RDP encryption 8. master how to Multiple connections to the VRDP server 9. master how to multiple remote monitors 10. VRDP video redirection 		LectureDiscussionPractice 2 X 50		0%
10	Get to know Vmare Virtualization technology	<ol style="list-style-type: none"> 1. Know a Brief History 2. Know the Benefits of VMWare 3. Knowing the Advantages of VMWare 4. Knowing the Differences in Versions 5. Familiar with VMWare vSphere and ESXi hypervisors 6. Know Free Licenses and Limitations 7. Know the Licensing Model 8. Find out tips for choosing a license 9. Knowing How to Buy a License 		Lecture Discussion 2 X 50		0%
11	Mastering the Use of VMWare Workstation	<ol style="list-style-type: none"> 1. Instructing 2. Install VMWare Workstation 3. Networking Configuration 4. Storage Configuration 		LectureDiscussionPractice 2 X 50		0%
12	Mastering VMWare Vsphere Installation	<ol style="list-style-type: none"> 1. Know the hardware requirements for ESXi installation 2. Able to install ESXi 3. Able to use DCUI 4. Able to activate SSH 5. Able to install Vsphere Client 		LectureDiscussionPractice 2 X 50		0%

13	Mastering the Use of Vshpere Networking			LectureDiscussionPractice 2 X 50			0%
14	Mastering the Use of VMWare Virtual Machine	1.Able to create VM 2.Able to configure BIOS 3.Able to install with ISO Server 4.Able to install with ISO Client 5.Able to Export and Import Ova 6.Able to use VMWare Tools		LectureDiscussionPractice 2 X 50			0%
15	Master the Server Hosting installation	1.able to install xampp 2.able to configure the webserver 3.able to use phpmyadmin 4.able to use ftp		LectureDiscussionPractice 2 X 50			0%
16	UAS			3 X 50			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.
- 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.