	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
Cloud Computing		5520203034		T=3	P=0	ECTS=4.77	7	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 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 Mengunakan 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.

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 Cloud technology	1. get to know the use of the cloud 2. Get to know cloud terminology 3. able to mention cloud functions	**Form of Assessment** : Participatory Activities	Lecture Discussion 3 X 50			10%

2	Mastering cloud phases and concepts	1. Know the cloud phases 2. Know the concept of Platform-as-a-Service, Three types of cloud computing, Key Players in Cloud Computing Platforms 3. Know Pricing comparison for major cloud computing platforms	**Form of Assessment** : Participatory Activities	LectureDiscussionCreating a 3 X 50 resume				0%
3	Able to Manage Virtual Machines	1. Knowing that Infrastructure-as-a-service (IaaS) refers to computing resources as a service. 2. This includes virtualized computers with guaranteed processing power and reserved bandwidth for storage and Internet access. 3. Knowing that Platform-as-a-Service (PaaS) is similar to IaaS, but also includes operating systems and required services for a particular application. In other words, PaaS is IaaS 4. with a custom software stack for the given application. 5. Knowing The data-Storage-as-a-Service (dSaaS) provides storage that the consumer is 6. used including bandwidth requirements for the storage.	**Form of Assessment** : Participatory Activities	LectureDiscussionPractice 2 X 50				10%
4	Being able to know the advantages of the cloud in development and testing. Colocation will place your server machine on someone else's rack with various bandwidth	1. able to explain Cloud Computing in Development/Test 2. able to explain Colocation 3. able to explain value comparison on co-location, physical server renting and IaaS	**Form of Assessment** : Participatory Activities	LectureDiscussionPractice 2 X 50				10%
5	Installing Guest Additions	Understanding Private and Public Cloud	**Form of Assessment** : Participatory Activities	LectureDiscussionPractice 2 X 50				0%
6	Mastering the Use of Virtual Storage	Able to practice Amazon EC2 VMs		LectureDiscussionPractice 2 X 50				0%

7	Mastering the Use of Virtual Networking	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	Cloud Computing Services	know the services of Cloud Computing	**Form of Assessment** : Participatory Activities	LectureDiscussionPractice 2 X 50			10%
10	Cloud Computing Service Comparison	Know the differences between Cloud Computing service providers	**Form of Assessment** : Participatory Activities	Lecture Discussion 2 X 50			10%
11	Knowing the good and bad of the Cloud for crucial systems	1. Instructing 2. Cloud goodness for crucial systems 3. disadvantages of the Cloud for crucial systems		LectureDiscussionPractice 2 X 50			0%
12	Understand Cloud Implementation	Understanding Cloud Implementation, in the world of modern technology		LectureDiscussionPractice 3 X 50			0%
13	Mastering the Use of Vshpere Networking		**Form of Assessment** : Project Results Assessment / Product Assessment	LectureDiscussionPractice 2 X 50			25%
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	**Form of Assessment** : Project Results Assessment / Product Assessment	LectureDiscussionPractice 2 X 50			25%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	50%
2.	Project Results Assessment / Product Assessment	50%
		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** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.