	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
System Design Analysis	5520203003		T=3	P=0	ECTS=4.77	5	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

Program Objectives (PO)

PO - 1	Understand system design concepts
PO - 2	Can make an analysis of a system design

PLO-PO Matrix

P.O
PO-1
PO-2

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
PO-1																
PO-2																

Short Course Description	The system analysis and design course discusses the basics of information system analysis, including the design of the information system. The first discussion was carried out on the organization's business processes and information system development planning. Next, discussion is carried out regarding the design of the information system through analysis and requirements design using object methodology using the UML language and finally regarding the implementation of the information system that has been analyzed and designed.

References

Main :

1. Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.
2. Dennis Wixom Roth. 2009. System Analysis & Design , 5 th. Wiley.
3. Hassan Gomaa. 2011. Software Modeling and Design: UML, Use Cases, Patterns, and Software Architectures. Cambridge University Press.
4. Ian Sommerville. 2011. Software Engineering , 9th ed. Addison-Wesley.
5. Kendall, K. E. and Kendall, J.E. 2011. Systems Analysis and Design; Edisi Ke-8. Pearson Education.
6. M. Page-Jones. 1999. Fundamentals of Object-Oriented Design in UML, 1st ed. Addison-Wesley.
7. Gary B Shelly and Harry J Rosenblatt. 2011. Systems Analysis and Design 9th Edition. Course Technology.
8. Shelly Rosenblatt. 2010. Systems Analysis and Design , 8 th. Course Technology.
9. Whitten J.L., Bentley L.D., Dittman K.C. 2004. Systems Analysis and Design Methods. McGraw-Hill Education.

Supporters:

1. Whitten J.L., Bentley L.D., Dittman K.C. 2004. Systems Analysis and Design Methods. McGraw-Hill Education.

Supporting lecturer	I Kadek Dwi Nuryana, S.T., M.Kom. Ramadhan Cakra Wibawa, S.Pd., 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 have the motivation to study APS by knowing the competencies gained after attending APSM lectures. Students are able to explain object-oriented modeling	Able to explain the role of the system analyst and modeling profession	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values **Form of Assessment** : Participatory Activities	Lectures, Discussions 3 X 50		**Material:** profession of systems analyst and modeling **References:** *Whitten JL, Bentley LD, Dittman KC 2004. Systems Analysis and Design Methods. McGraw-Hill Education.*	20%
2	Students are able to explain the role of software in solving business problems and formulating software system requirements	Able to solve business problems and explore user needs	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values **Form of Assessment** : Participatory Activities	Presentation, discussion and reflection 3 X 50		**Material:** business problems and exploring user needs **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	20%
3	Students are able to explain the role of software in solving business problems and formulating software system requirements	Able to create use case diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Presentation, discussion and reflection 3 X 50		**Material:** the role of software **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
4	Students are able to find objects and classes in the development of the software system that will be proposed.	Able to determine and analyze classes	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Presentations, exercises, discussions and reflections 3 X 50		**Material:** analyzing class **Reader:** *Dennis Wixom Roth. 2009. Systems Analysis & Design, 5 th. Wiley.*	0%
5	Students are able to find objects and classes in the development of the software system that will be proposed.	Able to determine and analyze classes	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values **Form of Assessment** : Participatory Activities	Presentations, exercises, discussions and reflections 3 X 50		**Material:** analyzing class **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	20%

6	Students are able to create event flows for each use case, create activity diagrams	Able to create activity diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Presentations, exercises, discussions and reflections 3 X 50		**Material:** activity diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
7	Students are able to distinguish the impact of architecture in design	Able to determine the right architecture for the case study problems faced	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Presentations, exercises, discussions and reflections 3 X 50		**Material:** architecture into design **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
8	UTS		**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	3 X 50			0%
9	Students are able to create collaboration diagrams	Able to create collaboration diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Lectures, Discussions, Practicum 3 X 50		**Material:** collaboration diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
10	Students are able to create sequence diagrams	Able to create sequence diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values **Form of Assessment** : Participatory Activities	3 X 50		**Material:** sequence diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	20%
11	Students are able to create class diagrams.	Able to create software interface designs	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Lectures, Discussions, Practicum 3 X 50		**Material:** class diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
12	Students are able to create state diagrams.	Able to create state chart diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Lectures, Discussions, Practicum 3 X 50		**Material:** state diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%

13	Students can understand and comprehend software testing techniques	Able to create class diagrams at the design stage	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values **Form of Assessment** : Project Results Assessment / Product Assessment	Lectures, Discussions, Practicum 3 X 50		**Material:** state diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	20%
14	Students can understand and comprehend software testing strategies	Able to create package diagrams, component diagrams, deployment diagrams	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Lectures, Discussions, Practicum 3 X 50		**Material:** package diagram, component diagram, deployment diagram **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
15	Students are able to implement iteration requirements into a system development plan using an OO approach	Able to determine the number of iterations and what they consist of and the reasons	**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	Lectures, Discussions, Practicum 3 X 50		**Material:** iteration **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%
16	UAS		**Criteria:** Cognitive Values, Character Values, and Psychomotor Values	3 X 50		**Material:** exam **Reader:** *Alan Dennis. 2013. Systems Analysis and Design with UML 4th Edition. John Wiley and Sons.*	0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	80%
2.	Project Results Assessment / Product Assessment	20%
		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.