	Universitas Negeri Surabaya **Faculty of Postgraduate School,** **Master of Technology and Vocational Education Study Program**	**Document Code**

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Software engineering	8310102030	Study Program Elective Courses	**T=2**	**P=0**	**ECTS=4.48**	2	May 14, 2023

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 which is charged to the course	
PLO-7	Have extensive knowledge in the fields of general knowledge, social and humanities
PLO-11	Able to apply applied research to innovate vocational learning methods, optimize industry-relevant technology
Program Objectives (PO)	
PO - 1	CLO1-CPL-S7 Adhere to procedures and codes of ethics in preparing RPL products

PLO-PO Matrix

P.O	PLO-7	PLO-11
PO-1		

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																

Short Course Description	This course discusses Software processes, Requirements engineering, System modeling, Architectural design, Design and implementation, Software testing, Software evolution, Dependability and Security, Software reuse, Component-based software engineering, Embedded software, and Software Management. The aim of this course is that students are able to apply the material studied in designing and implementing Informatics and ICT Projects.

References

Main :

1. Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Jurnal Penelitian Proceeding Seminar

Supporters:

1. Jurnal penelitian yang relevan

Supporting lecturer	Dr. Rina Harimurti, S.Pd., M.T. Dr. Lilik Anifah, 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	Students are able to understand Software Engineering	Students are able to understand Software Engineering	**Criteria:** Scale assessment score 0-100 **Form of Assessment** : Participatory Activities	Direct Instruction, Discussion 2 X 50			5%
2	Students are able to understand software processes. Students are able to implement the material learned in designing	Students are able to explain software processes. Students are able to implement the material learned in designing	**Form of Assessment** : Participatory Activities	Direct Instruction and Discussion 2 X 50		**Material:** Software process **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011.* *Journal of Research Seminar Proceedings*	5%
3	Students are able to explain engineering requirements. Students are able to identify engineering needs/requirements in simple design	Students discuss engineering Requirements material. Students explain engineering Requirements. Students give examples of simple designs	**Criteria:** Scale assessment score 0-100 **Form of Assessment** : Test	Direct Instruction and Discussion 2 X 50		**Material:** Requirements engineering **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011.* *Journal of Research Proceedings Seminar*	5%
4	Students are able to explain System modeling. Students are able to give examples of simple Informatics or ICT Project models	Students are able to explain System modeling. Students are able to model simple Informatics or ICT projects	**Criteria:** Assessment score 0-100 **Form of Assessment** : Test	Direct Instruction and Discussion 2 X 50		**Material:** System modeling **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011.* *Journal of Research Proceedings Seminar*	5%
5	Students are able to explain architectural design. Students are able to give examples of architectural design on simple ICT projects	Students are able to explain architectural design. Students are able to give examples of architectural design on simple ICT projects		Direct Instruction and Problem Based Learning 2 X 50		**Material:** Architectural design **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011.* *Journal of Research Proceedings Seminar* **Material:** Architectural design **Library:** *Relevant research journals*	0%
6	Students are able to explain design and implementation in software engineering. Students are able to design simple ICT projects	Students are able to explain design and implementation in software engineering. Students are able to design simple ICT projects		Direct Instruction, Project Based Learning and Discussion 2 X 50		**Material:** Design and implementation **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011.* *Journal of Research Proceedings Seminar*	0%

7	Students are able to implement the material studied in designing and implementing processes, Requirements engineering, System modeling, Architectural design, Design and implementation in simple Informatics and ICT projects.	Students are able to implement the material studied in designing and implementing processes, Requirements engineering, System modeling, Architectural design, Design and implementation in simple Informatics and ICT projects.	**Form of Assessment** : Test	Project Based Learning 2 X 50		**Material:** designing and implementing processes, Requirements engineering, System modeling, Architectural design, Design and implementation **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Proceedings Seminar* **Material:** designing and implementing processes, Requirements engineering, System modeling, Architectural design, Design and implementation **Library:** *Relevant research journals*	15%
8	UTS		**Form of Assessment** : Project Results Assessment / Product Assessment	2 X 50		**Material:** designing and implementing processes, Requirements engineering, System modeling, Architectural design, Design and implementation **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Proceedings Seminar*	25%
9	Students are able to explain software testing and design testing software in simple projects.	Students explain about software testing and design software testing in simple projects according to correct procedures.	**Form of Assessment** : Participatory Activities	Discussion and Project Based Learning 2 X 50		**Material:** software testing **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Seminar Proceedings* **Material:** software testing **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Seminar Proceedings*	0%

10	Students are able to explain software evolution and analyze software evolution in simple projects.	Students explain software evolution and analyze software evolution in simple projects according to procedures	**Criteria:** Scale assessment score 0-100	Discussion and Project Based Learning 2 X 50		**Material:** software evolution **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Proceedings Seminar*	100%
11	Students are able to explain about Dependability and Security	Students explain Dependability and Security well	**Criteria:** Scale assessment score 0-100	Discussion and Problem Based Learning 2 X 50		**Material:** Dependability and Security **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Research Journal Seminar Proceedings*	0%
12	Students are able to explain about software reuse which is supported by research/proceeding journals.	Students explain about software reuse which is supported by research/proceeding journals	**Criteria:** Scale assessment score 0-100	Discussion and Review of 2 X 50 papers		**Material:** Software reuse **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Seminar Proceedings*	0%
13	Students are able to explain component-based software engineering according to the results of the review paper.	Students explain about component-based software engineering according to the results of the review paper.	**Criteria:** Scale assessment score 0-100	Discussion and Review of 2 X 50 papers		**Material:** Component-based software engineering **Bibliography:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Journal of Research Seminar Proceedings*	0%
14	Students are able to explain about Embedded software based on the review paper that has been accepted.	Students explain about Embedded software based on the review paper that has been accepted.	**Form of Assessment** : Project Results Assessment / Product Assessment	Discussion and Review of 2 X 50 papers		**Material:** Embedded software **Library:** *Relevant research journals*	5%
15	Students are able to explain Software Management and analyze Software Management in simple projects.	Students explain Software Management and analyze Software Management in simple projects well	**Form of Assessment** : Project Results Assessment / Product Assessment	Paper review, discussion and Project Based Learning 2 X 50		**Material:** Software Management **Library:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Research Journal Seminar Proceedings*	15%

16	Students are able to explain Software Management and analyze Software Management in simple projects.	Students explain Software Management and analyze Software Management in simple projects well	**Form of Assessment** : Project Results Assessment / Product Assessment, Test	Paper review, discussion and Project Based Learning 2 X 50		**Material:** Project Presentation **Library:** *Sommerville, SOFTWARE ENGINEERING Ninth Edition, Pearson, 2011. Research Journal Seminar Proceedings* **Material:** Project presentation **Bibliography:** *Relevant research journals*	20%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	10%
2.	Project Results Assessment / Product Assessment	55%
3.	Test	35%
		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.