	Universitas Negeri Surabaya **Faculty of Engineering,** **Bachelor of Information Systems Study Program**	

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Testing and Implementation of Information Systems	5720102070		T=3	P=0	ECTS=4.77	5	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	I Kadek Dwi Nuryana, S.T., M.Kom.

Learning model	Case Studies

Program Learning Outcomes (PLO)	PLO study program that is charged to the course	
	PLO-24	Mastering concepts and skills in computer programming languages;
	PLO-29	Able to apply knowledge in the fields of computing, computer networks and programming in accordance with scientific disciplines;
	Program Objectives (PO)	
	PO - 1	Able to utilize ICT in engineering testing and system implementation
	PO - 2	Mastering the concept of system testing and implementation in providing an understanding of system planning, system analysis, general system design, system evaluation and selection, detailed system design, system implementation, system maintenance, general overview of system implementation, system maintenance. Defining software productivity and presenting two ways to measure this productivity, Quality dimensions, quality as the basis for testing, white box and black box software testing
	PO - 3	Able to make strategic decisions for planning, analysis, evaluation design, system selection and determining software productivity
	PLO-PO Matrix	

P.O	PLO-24	PLO-29
PO-1		
PO-2		
PO-3		

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																
PO-3																

Short Course Description	System testing and implementation courses provide an understanding of System Planning, System Analysis, General System Design, System Evaluation and Selection, Detailed System Design, System Implementation, System Maintenance, General Overview of System Implementation, System Maintenance. Define software productivity and present two ways to measure this productivity, Quality dimensions, quality as a basis for testing, white box and black box software testing.

References	Main :	
	1. Romeo. 2003. Testing dan Implementasi Sistem Edisi 1. Surabaya : STIKOM. 2. Hetzel, Bill. 1998. The Complete Guide to Software Testing Second Edition. New York: John Wiley & Sons. 3. Shoemaker, D., dan Jovanovic, Vladan. 1999. Engineering A Better Software Organization. Michigan:Quest Publishing House. 4. Pressman, R. 2000. Software Engineering : A Practioners Approach 5TH Editon. Boston : Mc Graw Hill. 5. Jogiyanto HM, MBA. Akt, Analisis Desain Sistem Informasi, Penerbit Andi.	
	Supporters:	

Supporting lecturer	Dwi Fatrianto Suyatno, 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	Understand the relationship between testing and software quality, and the importance of testing for software organizations	1. Explain the definition of testing. 2. Explain the definition of quality 3. Explain the relationship between testing & quality. 4. Mention general quality factors	**Criteria:** 1. Participation = 20% 2. Tasks = 30% 3. UTS = 20% 4. UAS = 30% **Form of Assessment** : Participatory Activities	Discussion, questions and answers 4x50	Discussion, questions and answers 4x50	**Material:** 2. Hetzel, Bill. 1998. The Complete Guide to Software Testing Second Edition. New York: John Wiley & Sons. 3. Shoemaker, D., and Jovanovic, Vladan. 1999. Engineering A Better Software Organization. Michigan:Quest Publishing House. 4. Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston : Mc Graw Hi **Reader:** *Romeo. 2003. System Testing and Implementation Edition 1. Surabaya: STIKOM.*	3%
2	Students can understand the basics of testing and a general overview of the testing life cycle and its integration in the software development life cycle	1. Explain the objectivity of testing. 2. Explain the objectivity of testing. 3. Explain the objectivity of testing. 4. Explain the objectivity of testing. 5. Explain the objectivity of testing.	**Criteria:** 1. Participation = 20% 2. Tasks = 30% 3. UTS = 20% 4. UAS = 30% **Form of Assessment** : Participatory Activities	Discussion, questions and answers 4 X 50	Discussion, questions and answers 4 X 50	**Material:** 2. Hetzel, Bill. 1998. The Complete Guide to Software Testing Second Edition. New York: John Wiley & Sons. 3. Shoemaker, D., and Jovanovic, Vladan. 1999. Engineering A Better Software Organization. Michigan:Quest Publishing House. 4. Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston : Mc Graw Hi **Reader:** *Romeo. 2003. System Testing and Implementation Edition 1. Surabaya: STIKOM.*	3%
3	Listen to the lecturer's explanation about the basics of white box testing test case design methods. Students can understand the basics of test case design methods and are able to create test case designs for white box testing	1. Explain the basics of the test case design method 2. Skilled in creating test case designs for white box testing	**Form of Assessment** : Participatory Activities	Discussion, questions and answers 4 X 50	Discussion, questions and answers 4 X 50	**Material:** White Box Testing **Bibliography:** *Shoemaker, D., and Jovanovic, Vladan. 1999. Engineering A Better Software Organization. Michigan:Quest Publishing House.*	3%

4	Students can understand about Software Testing	1.Explain the basics of the black box testing test case design method 2.Skilled in designing black box testing test cases		presentation, discussion, question and answer 4 X 50	presentation, discussion, question and answer 4 X 50	**Material:** Introduction to Software Testing **Library:** *Romeo. 2003. System Testing and Implementation Edition 1. Surabaya: STIKOM.*	4%
5	Students can understand the basics of other test case design methods	1.Mention the basics of other test case design methods. 2.Explain the basics of other test case design methods	**Form of Assessment** : Participatory Activities	discussion, questions and answers 4 X 50	discussion, questions and answers 4 X 50	**Material:** Test case design **Reference:** *Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston: McGraw Hill.*	4%
6	Students can understand Functional Testing	Explain the concept of testing strategy	**Form of Assessment** : Participatory Activities, Practical Assessment	discussion, questions and answers 4 X 50	discussion, questions and answers 4 X 50	**Material:** Functional Testing **Reference:** *Hetzel, Bill. 1998. The Complete Guide to Software Testing Second Edition. New York: John Wiley & Sons.*	4%
7	Students can understand Non-Functional Testing	1.Explain the meaning of integration testing 2.Explains top down and bottom up integration 3.Explain Regression and smoke testing 4.Explain integration documentation 5.Explains the introduction and criteria for validation testing 6.Explain alpha and beta testing	**Form of Assessment** : Participatory Activities	discussion questions and answers practice questions 4x50	discussion questions and answers practice questions 4 X 50	**Material:** Non-Functional Testing **References:** *Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston: McGraw Hill.*	4%

8	Midterm Exam (UTS)	1.Do UTS questions about the relationship between testing and software quality, and the importance of testing for software organizations. 2.Do UTS questions about the basics of testing and a general overview of the testing life cycle and its integration in the software development life cycle 3.Do UTS questions on the basics of test case design methods and be able to create test case designs for white box testing 4.Do UTS questions on the basics of test case design methods and be able to create test case designs for black box testing 5.Doing UTS questions on the basics of other test case design methods 6.Work on UTS questions about the concept of testing strategy and approaches that can be used in determining unit testing strategy	**Criteria:** 1.Participation = 20% 2.Tasks = 30% 3.UTS = 20% 4.UAS = 30% **Form of Assessment** : Test	UTS 4 X 50	UTS 4 X 50	**Material:** UTS **Library:**	20%
9		1.Explaining the Introduction to System Testing 2.Explain Recovery Testing. 3.Explaining Security Testing 4.Explaining Performance Testing. 5.Explaining the Art of Debugging 6.Explain Debugging Approach	**Form of Assessment** : Participatory Activities	Discussion, questions and answers 4 X 50	Discussion, questions and answers 4 X 50	**Material:** Integration Testing **Reader:** *Jogiyanto HM, MBA. Akt, Information Systems Design Analysis, Andi Publisher.*	3%
10		1.Explaining the Objectivity of the Testing Plan 2.Explaining Testing Plans Based on IEEE Standards 3.Mention Things Related to the Testing Plan 4.Explaining a Simple Test Plan Framework	**Form of Assessment** : Participatory Activities	Discussion, questions and answers 4 X 50	Discussion, questions and answers 4 X 50	**Material:** Regression Testing **References:** *Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston: McGraw Hill.*	3%

11	Students can carry out web application testing techniques such as user interface (UI), functionality and performance testing	1. Explain the difference between Structured vs Unstructured Testing. 2. Explain the differences 3. High Level vs Level of Detail Test Specifications 4. Explaining the Adequacy of the Test 5. Explaining Test Sequentialization	**Form of Assessment** : Participatory Activities	Discussion, questions and answers 4 X 50	Discussion, questions and answers 4 X 50	**Material:** Website Testing **Reader:** *Jogiyanto HM, MBA. Akt, Information Systems Design Analysis, Andi Publisher.*	3%
12	Students understand and are able to estimate in testing planning	1. Explaining Test Effort Estimation Techniques 2. Mention Estimation Factors 3. Explaining Test Effort Estimation 4. Explaining Test Business Scheduling	**Form of Assessment** : Participatory Activities	lecture, discussion, question and answer 4 X 50	lecture, discussion, question and answer 4 X 50	**Material:** Estimation and testing planning **Reader:** *Jogiyanto HM, MBA. Akt, Information Systems Design Analysis, Andi Publishers.*	4%
13	Students can carry out mobile application testing techniques such as testing on various platforms and devices	1. Explain the definition of the software development process 2. Explaining the Importance of Process Standardization 3. Explaining the Relationship Between Process Standardization 4. Explaining Software & Testing Methodology	**Form of Assessment** : Participatory Activities	lecture, discussion, question and answer 4 X 50	lecture, discussion, question and answer 4 X 50	**Material:** Mobile Application Testing **Reader:** *Jogiyanto HM, MBA. Akt, Information Systems Design Analysis, Andi Publishers.*	4%
14	Students understand the testing life cycle in the software life cycle	1. Testing Activities & Products 2. Integrating Testing into the Software Life Cycle 3. Testing with Review 4. Requirements Testing 5. Understand and explain the concept of probability	**Form of Assessment** : Participatory Activities	Exercise/Practice 4 X 50	Exercise/Practice 4 X 50	**Material:** Testing life cycle **Reference:** *Pressman, R. 2000. Software Engineering: A Practioners Approach 5TH Editon. Boston: McGraw Hill.*	4%
15	Students can apply the stages of information system implementation: planning, development, testing, launching and maintenance	1. Explains new concepts around testing and multiple testing for specific environments, architectures and applications 2. Skilled in conducting application testing based on case studies	**Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Exercise/Practice 4 X 50	Exercise/Practice 4 X 50	**Material:** Implementation of testing **Reader:** *Romeo. 2003. System Testing and Implementation Edition 1. Surabaya: STIKOM.*	4%
16	Final Semester Examination (UAS)		**Form of Assessment** : Participatory Activities, Tests	UAS 4 X 50	UAS 4 X 50	**Material:** UAS **Literature:**	30%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	57%
2.	Project Results Assessment / Product Assessment	2%
3.	Practical Assessment	2%
4.	Test	35%

	96%

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.