	Universitas Negeri Surabaya Faculty of Engineering, Building Engineering Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Drawing Building Structures 1	8320502129		T=2	P=0	ECTS=3.18	3	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Gde Agus Yudha Prawira Adistana, S.T., M.T.

Learning model	**Case Studies**
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	Introduction to the types, functions and ways of using drawing tools; Various lines, letters, numbers and symbols and their functions; Explain the various Pictorial, Orthogonal and Perspective projections and their applications in civil engineering; Drawing a simple residential building structure, consisting of a floor plan, foundation plan, roof plan, longitudinal section, cross section, front view, side view, sanitation plan, mechanical and electrical plan along with structural details, and simple residential sanitation using AutoCAD software.
References	**Main :**
	1. Affandi, Achmad Irfan. 19 26. Buku Ajar: Menggambar Teknik, Unesa Press 2. Cahyaka, Hendra Wahyu. 19 26 Gambar Teknik. Unesa Press. 3. S. C. Sharma. 1979. Engineering Drawing Part I. New York: Chand-Company Ltd. , Ram Nagar. 4. 26 26 26. , 20 26. Technical Drawing. 26 26. . 5. Khrisbianto, Andi. 2009. AutoCAD 2010 To The Point. Jakarta: Elex Media Komputindo. 6. Jurnal Dimensi Teknik Arsitektur Terakreditasi, Universitas Kristen Petra, Surabaya.
	Supporters:
Supporting lecturer	

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	Identify the types and functions of standard drawing tools, lines, letters, numbers and symbols.	1. Identify types of drawing tools 2. Explain the function of drawing tools 3. Explain the standards for letter and number lines 4. Apply standard drawings of letter and number lines		Lecture, discussion, question and answer presentation. 3 X 50			0%
2	Students are able to design civil building planning drawings.	1. Describe the floor plan of a multi-storey building. 2. Provide clear information on the function of buildings and rooms. 3. Describes the roof plan plan. 4. Describe the floor plan, beams and columns. 5. Describe the cross-section and longitudinal sections of the building.		- Group discussion - 3 X 50 case study			0%
3	Students are able to calculate the load from the roof for planning curtains, handlebars and wind ties and control capacity for safe conditions	1. Describe the load working on the roof. 2. Calculate the amount of load acting on the roof based on the roof plan. 3. Creating models in computer programming for civil engineering. 4. Operate computer programs for civil engineering to obtain structural analysis results in the form of internal forces, moments and support reactions. 5. Calculating internal force capacity. 6. Calculate internal moment capacity. 7. Controlling deflection.		- Group discussion - 3 X 50 case study			0%

4	Able to draw various Orthogonal Projections of simple building shapes	1. Identifying Orthogonal Projection images of simple building shapes 2. Explain Orthogonal Projection of simple building shapes 3. Drawing Orthogonal Projections of simple building shapes		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
5	Able to draw various Orthogonal Projections of simple building shapes	1. Identifying Orthogonal Projection images of simple building shapes 2. Explain Orthogonal Projection of simple building shapes 3. Drawing Orthogonal Projections of simple building shapes		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
6	Understand the application of sketch drawings and technical specifications in drawing simple residential house plans according to the steps and drawing standards in AutoCAD format.	1. Understand sketch drawing applications and technical specifications for floor plans 2. Identify the steps for drawing a floor plan 3. Identify floor plan drawing standards 4. Draw a simple residential house plan according to the steps and drawing standards.		Lectures, discussions, questions and answers, and assignments, 3 X 50 presentations			0%

7	Understand the principles of the law of equilibrium and soil conditions in simple residential house foundation drawings according to the steps and standard drawings in AutoCAD format.	1. Identify the principles of the law of equilibrium and soil conditions in foundation drawings 2. Identify the steps for drawing a foundation 3. Identify foundation drawing standards 4. Draw the foundation according to the steps and drawing standards		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
8	Understand the principles of the law of equilibrium and soil conditions in simple residential house foundation drawings according to the steps and standard drawings in AutoCAD format.	1. Identify the principles of the law of equilibrium and soil conditions in foundation drawings 2. Identify the steps for drawing a foundation 3. Identify foundation drawing standards 4. Draw the foundation according to the steps and drawing standards		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
9	Understand the principles of statics and technical provisions in drawing simple residential roof construction according to the steps and drawing standards in AutoCAD format.	1. Identify the principles of statics and technical provisions for roof construction drawings 2. Identify the steps for drawing a roof construction 3. Identify standard roof construction drawings 4. Draw a simple residential roof construction according to the steps and drawing standards.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%

10	Understand the principles of statics and technical provisions in longitudinal and cross section construction drawings in AutoCAD format.	Identifying the principles of statics and technical provisions for longitudinal and cross section construction drawings. Identifying steps and standards for section construction drawings. Drawing construction drawings for longitudinal and cross sections of Simple Residential Houses according to the steps and standard drawings.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
11	Understand the principles of statics and technical provisions in longitudinal and cross section construction drawings in AutoCAD format.	Identifying the principles of statics and technical provisions for longitudinal and cross section construction drawings. Identifying steps and standards for section construction drawings. Drawing construction drawings for longitudinal and cross sections of Simple Residential Houses according to the steps and standard drawings.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
12	Understand the principles of statics and technical provisions in longitudinal and cross section construction drawings in AutoCAD format.	Identifying the principles of statics and technical provisions for longitudinal and cross section construction drawings. Identifying steps and standards for section construction drawings. Drawing construction drawings for longitudinal and cross sections of Simple Residential Houses according to the steps and standard drawings.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
13	Understand the technical provisions of Structural Details, ME and Sanitation in AutoCAD format	Identifying technical provisions for Structure, ME and Sanitation Details Identifying steps and standards for Structure, ME and Sanitation Details Drawing Structure, ME and Sanitation Details for Simple Residential Houses according to drawing steps and standards.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%

14	Understand the technical provisions of Structural Details, ME and Sanitation in AutoCAD format	Identifying technical provisions for Structure, ME and Sanitation Details Identifying steps and standards for Structure, ME and Sanitation Details Drawing Structure, ME and Sanitation Details for Simple Residential Houses according to drawing steps and standards.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
15	Understand the technical provisions of Structural Details, ME and Sanitation in AutoCAD format	Identifying technical provisions for Structure, ME and Sanitation Details Identifying steps and standards for Structure, ME and Sanitation Details Drawing Structure, ME and Sanitation Details for Simple Residential Houses according to drawing steps and standards.		Lectures, discussions, questions and answers, and assignments, presentations. 3 X 50			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

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.