	Universitas Negeri Surabaya Vocational Faculty, D4 Civil Engineering Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
DRAWING HIGH-STORY BUILDINGS AND PRACTICUM	2230506025		T=4	P=0	ECTS=6.36	2	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Puguh Novi Prasetyono, S.Pd., M.T.

Learning model	**Project Based Learning**	
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**	
	Program Objectives (PO)	
	PO - 1	Utilizing learning resources and ICT to support mastery of 3-story building construction theory which includes: Architectural Drawings (plans, views, sections, roofs), Structural Drawings (foundations, 2nd floor column beams, ring balks and 3rd floor beams, plates, portals) and Mechanical Electrical Drawings (light point installation, clean and dirty water installation)
	PO - 2	Have knowledge about mastering the construction theory of non-storied buildings which includes: Architectural Drawings (plans, views, sections, roofs), Structural Drawings (foundations, 2nd floor column beams, ring balks and 3rd floor beams, plates, portals) and Mechanical Electrical Drawings (light point installations, clean and dirty water installations) in accordance with established quality standards.
	PO - 3	Make decisions in designing the construction of non-storied buildings which include: Architectural Drawings (plan, views, sections, roofs), Structural Drawings (foundations, 2nd floor column beams, ring balks and 3rd floor beams, plates, portals) and Mechanical Electrical Drawings (installation of light points, installation of clean and dirty water) professionally.
	PO - 4	Have a responsible attitude by applying mastery of non-storied building construction which includes: Architectural Drawings (plans, views, cuts, roofs), Structural Drawings (foundations, 2nd floor column beams, ring balks and 3rd floor beams, plates, portals) and Drawings Mechanical Electrical (light point installation, clean and dirty water installation) professionally.
	PLO-PO Matrix	

P.O
PO-1
PO-2
PO-3
PO-4

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																
PO-4																

Short Course Description	Introduction to drawing working drawings for a 3-storey low-rise building consisting of Architectural Drawings (plans, views, cuts, roofs), Structural Drawings (foundations, 2nd floor column beams, ring balks and 3rd floor beams, plates, portals) and Mechanical Drawings Electrical (light point installation, clean and dirty water installation), along with detailed drawings. Lectures are held through an expository approach in the form of lectures and questions and answers followed by discussion and reflection activities which are equipped with the use of LCD, OHP, and an inquiry approach, namely partial/structured completion of individual assignments.	
References	**Main :**	

	1. Frederick E Giesecke.Technical Draw inf. Pearson Internasional Edition 2. Soemadi R. Konstruksi Bangunan Gedung. 3. Soegihardjo R. Gambar-gambar Dasar Ilmu Bangunan. 4. Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons. 5. Irfan A. 2004. Menggambar Struktur Bangunan I. Surabaya: JTS 13 FT 13 Unesa 6. Benny Puspantoro.1996. Konstruksi Bangunan Gedung Bertingkat Rendah. Yogyakarta: Universitas Atma Jaya
	Supporters:
Supporting lecturer	Arik Triarso, S.Pd., M.T. Feriza Nadiar, S.T., M.T. Dr. Wendy Ivannal Hakim, S.T., M.Ars.

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	Able to draw plans	1.Identify image notations 2.Explain image notation 3.Apply floor plan images	**Criteria:** Full marks are obtained if you work on the floor plan correctly **Form of Assessment** : Practical Assessment, Practice/Performance	Lectures, discussions and questions and answers and practice drawing 3X 50		**Material:** Observing floor plan drawing material. **Reference:** *Soemadi R. Building Construction.* **Material:** Identifying floor plan drawings **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition*	5%
2	Able to draw plans	1.Identify image notations 2.Explain image notation 3.Apply floor plan images	**Criteria:** Full marks are obtained if you work on the floor plan correctly **Form of Assessment** : Practical Assessment, Practice/Performance	Lectures, discussions and questions and answers and practice drawing 3 X 50		**Material:** Observing floor plan drawing material. **Reference:** *Soemadi R. Building Construction.* **Material:** Identifying floor plan drawings **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition*	5%
3	Able to draw foundations and sloof columns	1.Identify foundation drawing notations 2.Explain the function and depiction of foundation drawings 3.Applying foundation drawings	**Criteria:** Full marks are obtained if you correctly draw the foundation and sloof columns **Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing material on drawings of foundations and sloof columns. **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa* **Material:** Identifying images of foundations and sloof columns. **Reference:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.*	5%

4	Able to draw 2nd floor column beams and 3rd floor ring beams	1. Identify the drawing notations for 2nd floor column beams and 3rd floor ring beams 2. Explain the function and depiction of 2nd floor column beams and 3rd floor ring beams 3. Apply the image of the 2nd floor column beam and the 3rd floor ring beam	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing drawings of 2nd floor column beams and 3rd floor ring beams. **Library:** *Soegihardjo R. Basic Drawings of Building Science.* **Material:** Identifying pictures of 2nd floor column beams and 3rd floor ring beams **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
5	Able to draw roof plans	1. Identify roof plan drawing notations 2. Explain the function and depiction of roof plans 3. Apply the roof plan drawing	**Form of Assessment** : Practical Assessment, Practice/Performance	Lectures, discussions and questions and answers and drawing practice. Exercise 3 X 50		**Material:** Observing roof plan drawings. **Reference:** *Soemadi R. Building Construction.* **Material:** Identifying roof plan drawings **Reference:** *Soemadi R. Building Construction.*	5%
6	Able to draw roof plans	1. Identify roof plan drawing notations 2. Explain the function and depiction of roof plans 3. Apply the roof plan drawing	**Form of Assessment** : Practical Assessment, Practice/Performance	Lectures, discussions and questions and answers and drawing practice. Exercise 3 X 50		**Material:** Observing roof plan drawings. **Reference:** *Soemadi R. Building Construction.* **Material:** Identifying roof plan drawings **Reference:** *Soemadi R. Building Construction.*	5%
7	UTS	Students master the material for meetings 1 - 6	**Criteria:** Perfect score if you do the questions correctly, completely and neatly	3 X 50 test			20%
8	Able to draw pieces	1. Identify cut drawing notations 2. Explain the function and depiction of pieces 3. Apply cutout images	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. Exercise 3 X 50		**Material:** Observing cut drawing material **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition* **Material:** Identifying cut drawings **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%

9	Able to draw pieces	1.Identify cut drawing notations 2.Explain the function and depiction of pieces 3.Apply cutout images	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. Exercise 3 X 50		**Material:** Observing cut drawing material **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition* **Material:** Identifying cut drawings **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	10%
10	Able to draw looks	1.Identify visible image notation 2.Explain the function and visual depiction 3.Apply visible images	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing visible drawing material **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition* **Material:** Identifying visible images **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
11	Able to draw looks	1.Identify visible image notation 2.Explain the function and visual depiction 3.Apply visible images	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing visible drawing material **Reference:** *Frederick E Giesecke.Technical Draw inf. Pearson International Edition* **Material:** Identifying visible images **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
12	Able to draw floor plates	1.Identify floor plate drawing notations 2.Explain the function and depiction of floor plates 3.Apply the floor plate image	**Form of Assessment** : Practical Assessment, Test	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing floor plate drawing material **. Reference:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.* **Material:** Identifying floor plate drawings **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
13	Able to draw portals	1.Identify portal image notations 2.Explain the function and depiction of the portal 3.Applying the portal image	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing portal image material **Bibliography:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.* **Material:** Identifying portal images **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%

14	Able to draw detailed stairs (structural and architectural drawings)	1. Identifying notations for ladder drawings 2. Explain the function and depiction of stairs 3. Apply the stairs image	**Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing detailed drawings of stairs. **Reference:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.* **Material:** Identifying detailed drawings of stairs **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
15	Able to draw clean and dirty water installation plans and electrical installations	Identify drawing notations for water and electricity installations	**Criteria:** Do it correctly and completely **Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing drawings of water and electricity installations. **Reference:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.* **Material:** Identifying drawings of water and electricity installations **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%
16	Able to draw clean and dirty water installation plans and electrical installations	Identify drawing notations for water and electricity installations	**Criteria:** Do it correctly and completely **Form of Assessment** : Practical Assessment	Lectures, discussions and questions and answers and drawing practice. 3 X 50		**Material:** Observing drawings of water and electricity installations. **Reference:** *Seelye E. 1959. Design, Data Book for Civil Engineers. New York: John Willey & Sons.* **Material:** Identifying drawings of water and electricity installations **Reference:** *Irfan A. 2004. Drawing Building Structures I. Surabaya: JTS 13 FT 13 Unesa*	5%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Practical Assessment	67.5%
2.	Practice / Performance	10%
3.	Test	2.5%
		80%

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.