		Document Code
	Universitas Negeri Surabaya **Vocational Faculty,** **D4 Transportation Study Program**	

SEMESTER LEARNING PLAN

Courses		CODE		Course Family		Credit Weight				SEMESTER	Compilation Date
Steel Structure		99993940102032				**T=2**	**P=0**	**ECTS=3.18**		2	July 16, 2024
AUTHORIZATION		**SP Developer**			**Course Cluster Coordinator**			**Study Program Coordinator**			
		....			....			Dr. Anita Susanti, 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)
	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 manufacture of steel construction materials, various steel profiles in trade, allowable stresses. Connection planning in steel construction includes bolted connections, rivets and welds. Then the cross-sectional analysis includes tensile members, compression members (columns), beams, beam-columns. The application is planning steel construction buildings (industrial buildings). Learning is carried out by applying a constructivist approach. Evaluation uses an exercise in making an assessment rubric for each student in discussion and reflection activities.
References	**Main :**

1. [1]. SNI-1983, Peraturan Perencanaan Bangunan Baja Indonesia 1983, Bandung: Yayasan DPMB[2]. SNI 03 - 1729 13 2002:Tata Cara Perencanaan Struktur Baja Untuk Bangunan Gedung , Jakarta: Departemen Pekerjaan Umum.[3]. Karyoto, 2014, Konstruksi baja, Unesa[4]. Segui, William T, 2007, Steel Design, Canada:Nelson.[5]. Setiawan,Agus, 2008,Perencanaan Struktur Baja dengan Metode LRFD, Jakarta:Erlangga.[6]. American Institute of Steel Construction (AISC) Jounal : New York.

Supporters:	

Supporting lecturer	Muhammad Imaduddin, S.T., M.T. Anggi Rahmad Zulfikar, M.T. Meity Wulandari, 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	Get to know the characteristics of steel construction	Explain the characteristics of steel	**Criteria:** 1. Can plan bolt connections correctly (score 50). 2. Can plan welded joints correctly (score 50)	Lecture, discussion and question and answer 1 X 1			0%

2	Able to plan joints in steel construction	Explain ASD and LRFD planning for connections in steel construction: bolts, rivets and welds	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
3	Able to plan joints in steel construction	Explain ASD and LRFD planning for connections in steel construction: bolts, rivets and welds	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
4	Able to plan joints in steel construction	Explain ASD and LRFD planning for connections in steel construction: bolts, rivets and welds	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
5							0%
6	Able to plan tensile rods	Explain ASD and LRFD planning for tension members	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
7							0%
8							0%
9	Able to plan compression members (columns)	Explain ASD and LRFD planning for compression members (columns)	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
10	Able to plan compression members (columns)	Explain ASD and LRFD planning for compression members (columns)	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
11	Able to plan blocks	Explain ASD and LRFD planning on beams	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
12	Able to plan blocks	Explain ASD and LRFD planning on beams	**Criteria:** 1.Can plan bolt connections correctly (score 50). 2.Can plan welded joints correctly (score 50)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
13	Able to plan beam-columns	Explain ASD and LRFD planning for beam-columns	**Criteria:** Can plan beam-columns correctly (score 100).	Lectures, discussions and questions and answers. Exercise 1 X 1			0%

14	Able to plan beam-columns	Explain ASD and LRFD planning for beam-columns	**Criteria:** Can plan beam-columns correctly (score 100).	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
15	Able to plan steel construction buildings	Explains ASD and LRFD planning for steel construction buildings	**Criteria:** 1.Planning results report (score 60) 2.Report presentation (score 40)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%
16	Able to plan steel construction buildings	Explains ASD and LRFD planning for steel construction buildings	**Criteria:** 1.Planning results report (score 60) 2.Report presentation (score 40)	Lectures, discussions and questions and answers. Exercise 1 X 1			0%

Evaluation Percentage Recap: Project Based Learning

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.