



Universitas Negeri Surabaya
Faculty of Engineering
Civil Engineering Undergraduate Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date		
Steel Structure (Frame and Portal)	2220103110		T=3 P=0 ECTS=4.77	4	July 18, 2024		
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator			
	Yogie Risdianto, S.T., 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						
		<table border="1" style="margin: auto;"> <tr><td style="width: 30px; height: 30px;">P.O</td></tr> </table>					P.O
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Short Course Description	Introduction to the manufacture of steel construction materials, various steel profiles in the trade, allowable stresses, connection planning in steel construction including bolted, riveted and welded connections. Section analysis includes tension members, compression members, columns, beams (bending and shear conditions), beam-column interactions, bending and bending-torsion conditions. Steel construction building planning (industrial buildings). Learning is carried out by applying a constructivist approach. Evaluation uses the exercise of making an assessment rubric for each student in discussion and reflection activities.						
References	Main :						
	<ol style="list-style-type: none"> 1. SNI-03-1729. 2002. Tata Cara Perencanaan Struktur Baja Untuk Bangunan Gedung. 2. SNI-1729. 2015. Spesifikasi Untuk Bangunan Gedung Baja Struktural. 3. SNI-03.1729. 2002. Perencanaan Struktur Baja dengan Metode LRFD (Berdasarkan SNI 03-1729-2002) 4. SNI 1726. 2012. Tata Cara Perencanaan Ketahanan Gempa Untuk Struktur Bangunan Gedung dan Non Gedung 5. William T Segui. 2007. Steel Design. 6. Jack Mc. Cormac. 2008. Structural Steel Design. 7. Dennis Lam. 2004. Structural Steel Work . 8. Agus Setiawan. 2008. Perencanaan Struktur Baja dengan Metode LRFD. Jakarta: Erlangga 9. Rudy Gunawan. 2000. Tabel Profil Konstruksi Baja. 						
	Supporters:						
Supporting lecturer	Arie Wardhono, S.T., M.MT., M.T., Ph.D.						
	Mochamad Firmansyah Sofianto, S.T., M.Sc., 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: Full marks if the report is bound, the report is arranged sequentially, and in accordance with theory	Lectures, discussions and questions and answers 3 X 50			0%
2	Students are able to plan connections in steel construction	1.Explain the planning of ASD and LRFD methods 2.Explains connections in steel construction: bolts, rivets, and welds	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
3	Students are able to plan connections in steel construction	1.Explain the planning of ASD and LRFD methods 2.Explains connections in steel construction: bolts, rivets, and welds	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 2 X 50 exercises			0%
4	Students are able to plan connections in steel construction	1.Explain the planning of ASD and LRFD methods 2.Explains connections in steel construction: bolts, rivets, and welds	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
5	Students are able to plan connections in steel construction	1.Explain the planning of ASD and LRFD methods 2.Explains connections in steel construction: bolts, rivets, and welds	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
6	Students are able to plan tensile rods	Explain ASD and LRFD planning for tension members	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
7	Students are able to plan tensile rods	Explain ASD and LRFD planning for tension members	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
8	Completing the Last Semester Exam (UTS)	Complete assignments in the time provided and get maximum marks.		Written exam 3 X 50			0%
9	Students are able to plan compression members (columns)	Explain ASD and LRFD planning for compression members (columns)	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%

10	Students are able to plan compression members (columns)	Explain ASD and LRFD planning for compression members (columns)	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
11	Students are able to plan blocks	Explain ASD and LRFD planning on beams	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
12	Students are able to plan blocks	Explain ASD and LRFD planning on beams	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
13	Students are able to plan beam-column	Explain ASD and LRFD planning for beam-columns	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
14	Students are able to plan beam-column	Explain ASD and LRFD planning for beam-columns	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
15	Students are able to plan steel construction buildings	Explain ASD and LRFD planning in steel construction buildings	Criteria: Full marks if the answers are complete, sequential, clear and correct	Lectures, discussions, questions and answers, and 3 X 50 exercises			0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
		0%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.