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

SEMESTER LEARNING PLAN

Courses		CODE		Course Family		Credit Weight			SEMESTER	Compilation Date
ROAD GEOMETRIC		3930103044				**T=3**	**P=0**	**ECTS=4.77**	2	July 16, 2024
AUTHORIZATION		**SP Developer**			**Course Cluster Coordinator**			**Study Program Coordinator**		
		....			....			Dr. Anita Susanti, S.Pd., M.T.		

Learning model	**Case Studies**

Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**
	Program Objectives (PO)
	PO - 1 — Students are expected to be able to design road geometrics in various categories of roads (urban, out of town, intersections, roundabouts, etc.) well in accordance with applicable rules and guidelines.
	PLO-PO Matrix

P.O
PO-1

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																

Short Course Description	Learn about trace measurements for new road routes and road improvements, transportation infrastructure and facilities, road transport legislation, road standards and benefits, road classification, road cross-section, vehicles: types of vehicles, visibility. Highway geometric planning: Highway geometric planning criteria, horizontal alignment and vertical alignment, combined alignment.

References	**Main :**

1. AASHTO. 1984. A Policy on Geometric Design of Highways and Streets. Washington D. C: AASHTO.
2. Anonim. 1970. Peraturan Perencanaan Geometrik Jalan Raya. Jakarta: Dirjen Bina Marga.
3. Anonim. 1997. Manual dan Kapasitas Jalan Indonesia (MKJI).
4. Sukirman, Silvia. 1994. Dasar-Dasar Perencanaan Geometrik Jalan. Bandung: Nova.
5. Oglesby, C.H. , Hicks, R.G. 1982. Highway Engineering. Singapore: John Wiley & Sons.
6. Soeparno, 2009. Geometrik Jalan Raya. Surabaya: JTS FT Unesa.
7. Hendarsin. S.L. 2000, Perencanaan Teknik Jalan Raya, Bandung: JTS, Politeknik Negeri Bandung.
8. Undang Undang Republik Indonesia No. 38 Tahun 2004.

Supporters:

1. Jurnal nasional dan jurnal internasional

Supporting lecturer	Dr. Ari Widayanti, S.T., M.T. Dr. Anita Susanti, S.Pd., 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	Able to understand the concept and meaning and history of Highways in general.	1. Explain the meaning of roads in general. 2. Explains the history of the highway.	**Criteria:** Understand the material well. **Form of Assessment :** Participatory Activities	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study		**Material:** concepts and understanding as well as history of highways in general. **Bibliography:** *Sukirman, Silvia. 1999. Geometric Road Planning. Bandung: Nova.*	10%

2	Students understand Road Classification in accordance with regulations and legislation	1. Explain the classification of highways according to Bina Marga. 2. Explain the classification according to highway class.	**Criteria:** Understand the material well. **Form of Assessment** : Participatory Activities	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study		**Material:** Road classification in accordance with regulations and legislation **Reference:** *Sukirman, Silvia. 1999. Geometric Road Planning. Bandung: Nova.* --- **Material:** Road Classification in accordance with regulations and legislation **Reference:** *Law of the Republic of Indonesia No. 38 of 2004.*	10%
3	Students understand Road Classification in accordance with regulations and legislation	1. Explain the Road Network System 2. Explain the classification of roads according to their development authority.	**Criteria:** Understand the material well **Form of Assessment** : Participatory Activities	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study		**Material:** Network system, classification of roads according to their development authority. **Bibliography:** *Sukirman, Silvia. 1999. Geometric Road Planning. Bandung: Nova.* --- **Material:** Network system, classification of roads according to their development authority. **References:** *Law of the Republic of Indonesia no. 38 of 2004.*	10%
4	Highway Geometric Planning Criteria	1. Explain the considerations in highway geometric planning 2. Explains standards and planned vehicle groups 3. Explain the composition/characteristics of traffic	**Criteria:** Understand the material well **Form of Assessment** : Project Results Assessment / Product Assessment	Presentation, Q&A, discussion and reflection 2 X 50		**Material:** Considerations in highway geometric planning, standards and planned vehicle groups, traffic composition/characteristics. **Reader:** *Anonymous. 1997. Manual and Capacity of Indonesian Roads (MKJI).*	15%
5	Highway Geometric Planning Criteria	1. Explain about passenger car units (SMP) and passenger car equivalents (EMP) 2. Explains the Volume and Capacity of road traffic. 3. Explaining the Level of Service (LOS) of Highways	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 50		**Material:** Passenger car units (smp), and passenger car equivalents (emp), road traffic volume and capacity, Highway Level of Service (LOS). **Reader:** *Anonymous. 1997. Manual and Capacity of Indonesian Roads (MKJI).*	20%
6	Able to explain about Viewing Distance.	1. Can define viewing distance 2. Explain the factors that influence visibility on straight roads. 3. Describe visibility at road curves.	**Criteria:** Understand the material well **Form of Assessment** : Participatory Activities	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study		**Material:** Viewpoint Reader : *Sukirman, Silvia. 1999. Geometric Road Planning. Bandung: Nova.* --- **Material:** Visibility on curves and straight roads. **Bibliography:** *Sukirman, Silvia. 1994. Basics of Geometric Road Planning. Bandung: Nova.*	0%
7	Able to explain horizontal alignment in highway geometric planning.	1. Explain in general about Horizontal alignment 2. Explains 3 (three) types of Bends: 1). FC, 2). SCS., 3) SS, in highway alignment planning 3. Explaining transition curves in types of curves	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study			0%
8	Able to explain horizontal alignment in highway geometric planning.	1. Explains about super elevation at highway bends 2. Explain about widening the road at the corner 3. Discuss examples of Horizontal Alignment planning questions	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study			0%
9	-	-	**Criteria:** -	- 1 X 1			0%
10	Able to explain the slope of the highway	1. Define road grade 2. Explaining Relative Ramps on highways 3. Explain the characteristics of the vehicle, 4. maximum and minimum slopes and the critical length of the slope 5. Explain the climbing lane on the highway.	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study			0%

11	Able to explain Vertical Alignment	1. Defining Vertical Alignment in general 2. Explaining Convex Vertical Curves on Highways	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. And task 2 X 50			0%
12	Able to explain Vertical Alignment	1. Explaining Concave Vertical Curves in Highways 2. Discuss examples of questions regarding Vertical Curve planning	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. And task 2 X 50			0%
13	Able to explain Super Elevation Diagrams around corners	1. Defining Super elevation diagrams in general 2. Explains the method for achieving Super elevation 3. Explain how to make Superelevation diagrams using ASSHTO and Bina Marga (BM) 4. Discusses examples of making Super elevation diagrams	**Criteria:** Understand the material well	Presentations, questions and answers, group discussions and reflections. 2 X 50 project based field study			0%
14	Combined Bends and Alignment Coordination Alignment Coordination	1. Defines Joint Bends and Alignment Coordination in general 2. Explain about one-way combined bends on highways	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 1 project based field study			0%
15	Combined Bends and Alignment Coordination Alignment Coordination	1. Explains the combined U-turn curve on the highway 2. Explain the conditions for combining several horizontal and vertical alignment elements and cross sections.	**Criteria:** Understand the material well	Presentations, questions and answers, discussions and reflections. 2 X 50 project based field study			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	30%
2.	Project Results Assessment / Product Assessment	15%
		45%

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.