



**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																																																		
Traffic Engineering	2220102098	Compulsory Study Program Subjects	T=2 P=0 ECTS=3.18	2	July 17, 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)																																																						
	PO - 1	Students are able to understand the role of Traffic Engineering for the benefit of users in supporting the economy, as well as the components that influence services therein																																																					
	PLO-PO Matrix																																																						
		<table border="1" style="margin: auto;"> <tr><td style="padding: 5px;">P.O</td></tr> <tr><td style="padding: 5px;">PO-1</td></tr> </table>				P.O	PO-1																																																
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PO-1																																																							
	PO Matrix at the end of each learning stage (Sub-PO)																																																						
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="padding: 5px;">P.O</td> <td colspan="16" style="padding: 5px;">Week</td> </tr> <tr> <td style="padding: 5px;">1</td><td style="padding: 5px;">2</td><td style="padding: 5px;">3</td><td style="padding: 5px;">4</td><td style="padding: 5px;">5</td><td style="padding: 5px;">6</td><td style="padding: 5px;">7</td><td style="padding: 5px;">8</td><td style="padding: 5px;">9</td><td style="padding: 5px;">10</td><td style="padding: 5px;">11</td><td style="padding: 5px;">12</td><td style="padding: 5px;">13</td><td style="padding: 5px;">14</td><td style="padding: 5px;">15</td><td style="padding: 5px;">16</td> </tr> <tr> <td style="padding: 5px;">PO-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>					P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																							
PO-1																																																							
Short Course Description	Characteristics of humans, vehicles, infrastructure, research: flow, speed, delays, origin/destination, house-to-house interviews, parking systems, accidents, inventory, public transport, transportation of goods, the relationship between speed, capacity, progress in population density, level of service, highway models: crossings, intersections, terminals and parking systems.																																																						
References	Main :																																																						
	<ol style="list-style-type: none"> 1. Dirjendat. 1999. Rekeyasa Lalu Lintas.Jakarta : Direktorat Bina Sistem Lalu Lintas Angkutan Kota. 2. Tamin, Ofyar Z. 1992. Perencanaan DanPemodelan Transportasi. Bandung : Penerbit ITB Bandung. 3. White, P. R. 1976. Planing for Public Transport. London : Hutchinson. 4. Anonim. 1997. Manual Kapasitas Jalan Indonesia. 5. Kementerian Perhubungan. 2014. Pedoman Kapasias Jalan Indonesia. 																																																						
	Supporters:																																																						
	1. Jurnal nasional dan jurnal internasional																																																						
Supporting lecturer	Purwo Mahardi, S.T., M.Sc. Abdiyah Amudi, S.T., M.T. Alwan Gangsar Brilian Putra, S.Tr.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	Students understand the definition of the basics of traffic engineering theory. Characteristics of traffic flows. Growth trends and forecasting.	Students can understand the characteristics of traffic flow and the influencing factors	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Discuss to narrow down the meaning of traffic engineering in 2 X 50 traffic engineering planning		<p>Material: definitions of the basics of traffic engineering theory, characteristics of traffic flows, growth trends and forecasting, characteristics of traffic flows and influencing factors.</p> <p>References: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p> <hr/> <p>Material: definitions of the basics of traffic engineering theory, characteristics of traffic flows, growth trends and forecasting, characteristics of traffic flows and influencing factors.</p> <p>Reference: <i>Ministry of Transportation. 2014. Guidelines for Indonesian Road Capacity.</i></p>	4%
2	Students understand the characteristics of traffic components: - Facilities - Road Users - Infrastructure	Students can understand the development of traffic trends in land use growth	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Discuss traffic growth and efforts to prepare 2 X 50 road infrastructure		<p>Material: Characteristics of traffic components: - Facilities - Road Users - Infrastructure</p> <p>Library: <i>Tamin, Ofyar Z. 1992. Transportation Planning and Modeling. Bandung: ITB Bandung Publisher.</i></p>	4%
3	Students understand the characteristics of highways and the characteristics of intersections	Students understand the components of highways and intersections	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Discuss examples of components that influence the characteristics of 2 X 50 highways and intersections		<p>Material: Highway and intersection components, as well as influencing factors.</p> <p>Reader: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p> <hr/> <p>Material: Highway and intersection components, as well as influencing factors.</p> <p>References: <i>Ministry of Transportation. 2014. Guidelines for Indonesian Road Capacity.</i></p>	4%

4	Students are able to understand traffic survey techniques: Types of traffic surveys Planning traffic surveys Survey inventions.	Students can understand and differentiate the definitions of each sub-material.	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Discuss the traffic survey process to support planning and evaluation of road capacity and 2 X 50 intersections		<p>Material: Traffic survey techniques: Types of traffic surveys Planning traffic surveys Survey inventions.</p> <p>Reader: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p> <hr/> <p>Material: Traffic survey techniques: Types of traffic surveys Planning traffic surveys Survey inventions.</p> <p>References: <i>Ministry of Transportation. 2014. Guidelines for Indonesian Road Capacity.</i></p>	4%
5	Students are able to understand the meaning of traffic counting: - Volume survey - Speed survey - Parking survey	Students can understand various traffic survey techniques and use data for design purposes	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Discuss the methods for calculating 2 X 50 traffic counting		<p>Material: Traffic counting: - Volume survey - Speed survey - Parking survey</p> <p>Reference: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p> <hr/> <p>Material: Traffic counting: - Volume survey - Speed survey - Parking survey</p> <p>Library: <i>Ministry of Transportation. 2014. Guidelines for Indonesian Road Capacity.</i></p>	4%
6	Students are able to understand the needs/calculations of capacity and service levels for road sections	Students are able to calculate the performance of sections and intersections	<p>Criteria: You get full marks if you do the questions and do everything correctly</p>	Discuss the calculation method and discuss the results of the 2 X 50 calculation		<p>Material: Needs/Calculation of capacity and level of service for road sections.</p> <p>Reader: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p> <hr/> <p>Material: Needs/Calculation of capacity and level of service for road sections.</p> <p>References: <i>Ministry of Transportation. 2014. Guidelines for Indonesian Road Capacity.</i></p>	4%
7	Students are able to understand capacity calculation planning and service levels for priority intersections	Students are able to analyze the capacity needs of road intersections according to the conditions of the surrounding environment	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Discuss the factors that influence the capacity analysis of the 2 X 50 priority intersection		<p>Material: Planning for calculating capacity and service levels for priority intersections</p> <p>Reference: <i>Directorate General. 1999. Traffic Engineering. Jakarta: Directorate of City Transport Traffic System Development.</i></p>	4%

8	UTS	UTS	<p>Criteria: UTS</p> <p>Form of Assessment : Project Results Assessment / Product Assessment, Test</p>	UTS 1 X 1			20%
9	Students understand and comprehend capacity calculations and service levels for intersections with traffic signaling devices	Students are able to explain the need for road transportation infrastructure in the form of APILL	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Students discuss the development of 2 X 50 road infrastructure needs		<p>Material: Calculation of capacity and level of service for intersections with traffic signaling devices.</p> <p>Reference: <i>Tamin, Ofyar Z. 1992. Transportation Planning and Modeling. Bandung: ITB Bandung Publisher.</i></p>	4%
10	Students understand & comprehend capacity calculations and service levels for roundabout and interchange intersections.	Students are able to explain the need for road transportation infrastructure in the form of APILL	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Students discuss the development of 2 X 50 road infrastructure needs		<p>Material: Calculation of capacity and level of service for roundabouts and interchanges.</p> <p>Reference: <i>Anonymous. 1997. Indonesian Road Capacity Manual.</i></p>	4%
11	Students are able to understand traffic signs, road markings and road equipment	Students are able to understand the definition and role of road equipment	<p>Criteria: 1. You get full marks if you do the questions and do everything correctly 2.10</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Students discuss the importance of road equipment needs in supporting the safety of 2 X 50 roads		<p>Material: Traffic signs, road markings and road equipment.</p> <p>Reference: <i>Director General. 1999. Traffic Engineering. Jakarta: Directorate of City Transport Traffic System Development.</i></p>	4%
12	Motor vehicle parking: Types of parking space requirements. Design of roadside parking	Students are able to understand parking needs and correct parking placement	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Discuss the parking design based on the available road space for 2 X 50 onstreet parking		<p>Material: Types of parking space requirements Roadside parking design</p> <p>Reference: <i>Tamin, Ofyar Z. 1992. Transportation Planning and Modeling. Bandung: ITB Bandung Publisher.</i></p>	4%
13	Students are able to recognize and understand motorized vehicle parking: - Geometric design of off-street parking (buildings/parking parks) Parking control	Students are able to understand the forms of parking on roads	<p>Criteria: You get full marks if you do the questions and do everything correctly</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Discuss about the 2 X 50 parking space unit		<p>Material: Motor vehicle parking: - Geometric design of off-road parking (buildings/parking parks) Parking control</p> <p>References: <i>Tamin, Ofyar Z. 1992. Transportation Planning and Modeling. Bandung: ITB Bandung Publisher.</i></p>	4%

14	Students are able to recognize and understand analysis for pedestrians and analysis for cyclists	Students are able to understand the planning stages of pedestrian facilities and bicycle lanes	Criteria: You get full marks if you do the questions and do everything correctly Form of Assessment : Project Results Assessment / Product Assessment	Discuss the importance of sustainable transportation in urban areas by implementing 2 X 50 pedestrian and bicycle lanes		Material: Analysis for pedestrians Analysis for cyclists Reference: <i>White, PR 1976. Planning for Public Transport. London: Hutchinson.</i>	3%
15	Students are able to know and understand traffic safety: - Collecting traffic accident data - Analysis of accidents and forces in accidents	Students are able to understand and analyze accidents	Criteria: You get full marks if you do the questions and do everything correctly Form of Assessment : Project Results Assessment / Product Assessment	Discuss accident data and techniques for recording the needs for 2 X 50 accident incidents in the field		Material: Traffic safety: - Collection of traffic accident data - Analysis of accidents and forces in accidents Literature: <i>National journals and international journals</i>	3%
16	Students are able to know and understand traffic safety: - Collecting traffic accident data - Analysis of accidents and forces in accidents	Students are able to understand and analyze accidents	Criteria: You get full marks if you do the questions and do everything correctly Form of Assessment : Project Results Assessment / Product Assessment, Test	Discuss accident data and techniques for recording the needs for 2 X 50 accident incidents in the field			30%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	12%
2.	Project Results Assessment / Product Assessment	63%
3.	Test	25%
		100%

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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.