



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

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date										
SOIL MECHANICS	3930103042		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	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	Study of the origin of soil and rocks, rock cycle, soil composition, relationship between soil parameters, soil consistency, soil classification according to AASHTO and USCS, water flow in the ground, flow net, lift force calculations, safety against heave and the concept of effective stress.																
References	Main :																
	1. Braja M. Das. 1995.Mekanika Tanah Jilid I(Alih Bahasa Noor Endah dan Indrasurya). Jakarta: Erlangga. 2. Braja M. Das. 1998.Advanced Soil Mechanics. Singapore: McGraw-Hill. 3. Joseph E. Bowles. 1996.Sifat-sifat Fisis dan Geoteknis Tanah(Alih Bahasa Johan Kelanaputra H.). Jakarta: Erlangga.																
	Supporters:																
Supporting lecturer	Arik Triarso, S.Pd., M.T. Mochamad Firmansyah Sofianto, S.T., M.Sc., 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 land	Explain the meaning of soil, the origin of soil, types of soil, soil particles and the behavior of clay minerals	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions and questions and answers 2 X 50			0%
2	able to understand the land	Explain the meaning of soil, the origin of soil, types of soil, soil particles and the behavior of clay minerals	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions and questions and answers 2 X 50			0%
3	able to understand soil composition, analyze soil parameters, the relationship between soil parameters and relative soil density	Determine volumetric gravimetric soil parameters from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
4	able to understand soil composition, analyze soil parameters, the relationship between soil parameters and relative soil density	Determine volumetric gravimetric soil parameters from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
5	able to understand soil composition, analyze soil parameters, the relationship between soil parameters and relative soil density	Determine volumetric gravimetric soil parameters from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
6	able to analyze soil consistency	Determine the liquid limit, plastic limit, plastic index and shrinkage limit values from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
7	able to analyze soil consistency	Determine the liquid limit, plastic limit, plastic index and shrinkage limit values from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
8	UTS	UTS	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	2 X 50			0%

9	able to classify soil	Able to create grain size distribution curves, able to classify USCS and AASHTO soil systems from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
10	able to classify soil	Able to create grain size distribution curves, able to classify USCS and AASHTO soil systems from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
11	able to classify soil	Able to create grain size distribution curves, able to classify USCS and AASHTO soil systems from theoretical and empirical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
12	Able to analyze water seepage in the ground	Determine water volume, elevation head, pressure head, total head. Determine the seepage coefficient from practical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
13	Able to analyze water seepage in the ground	Determine water volume, elevation head, pressure head, total head. Determine the seepage coefficient from practical data	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%
14	Able to analyze the lifting force under the dam and effective stress	Determine the lifting force under the dam, total stress, water, effective and exit gradients and safety against heave	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			0%

15	Able to analyze the lifting force under the dam and effective stress	Determine the lifting force under the dam, total stress, water, effective and exit gradients and safety against heave	Criteria: Full marks are obtained if you do all the questions correctly and the completeness of the report is correct	Lectures, discussions, questions and answers, demonstrations and practicums in the 2 X 50 laboratory			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.
- 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.