	Universitas Negeri Surabaya Vocational Faculty, D4 Civil Engineering Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
SOIL MECHANICS	2230503049		T=3	P=0	ECTS=4.77	2	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Puguh Novi Prasetyono, S.Pd., M.T.

Learning model	Case Studies

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 definitions, cycles and types of soil, physical properties of soil (composition, classification and consistency of soil), mechanical properties of soil (shear strength, premeability, compaction, consolidation), soil tension, and types of soil investigations (laboratory investigations, Sondir, Boring, SPT, Vane Shear, etc.).

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	Satriana Fitri Mustika Sari, S.T., M.T. 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	Introduction to soil mechanics		Online Google Meet/Zoom and Vinesa 3 X 50			0%

2	Able to understand soil composition, analyze soil parameters, relationships between soil parameters	Determine gravimetric volumetric soil parameters from theoretical and empirical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%
3	Able to understand soil composition, analyze soil parameters, relationships between soil parameters	Determine gravimetric volumetric soil parameters from theoretical and empirical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%
4	Able to classify soil	Able to create grain size distribution curves, able to classify USCS and AASHTO soil systems from theoretical and empirical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%
5	Able to classify soil	Able to create grain size distribution curves, able to classify USCS and AASHTO soil systems from theoretical and empirical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%
6	Able to analyze soil consistency	Determine the liquid limit, plastic limit, plastic index and shrinkage limit values from theoretical and empirical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%
7	Able to understand ground stress	Can determine shear stress & normal stress analytically.		Online Google Meet/Zoom and Vinesa 4 X 50			0%
8	U.S.S	U.S.S		Online Google Meet/Zoom and Vinesa 4 X 50			0%
9	Able to analyze soil shear strength	1. Can determine shear stress & normal stress graphically using Mohr's Circle & Pole Method. 2. Can determine shear strength parameters: cohesion and shear angle		Online Google Meet/Zoom and Vinesa 4 X 50			0%
10	Able to analyze water seepage in the ground	Determine water volume, elevation head, pressure head, total head. Determine the seepage coefficient from practical data		Online Google Meet/Zoom and Vinesa 4 X 50			0%

No							
11	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 as well as safety against heave		Online Google Meet/Zoom and Vinesa 4 X 50			0%
12	Able to understand soil compaction	Able to explain the meaning & function of soil compaction - Able to draw. proctor compaction graph. - Can specify. price of max soil density (gdmax) & optimum water content (wcopt). -Able to calculate and draw the gdZAV curve. - Able to explain the meaning of compaction in the field. - Can determine the price of lap density. - Determine the relative density, dry set and wet set water content.		Online Google Meet/Zoom and Vinesa 4 X 50			0%
13	Students are able to understand soil compression	- Can explain about the compression that occurred in the year. - Can explain different things. NC clay & OC Soil. - can be decisive. land overburden. - can be determined. pre-consolidation tag, Cc lap and Cs from e Vs log s graph for NC & OC Soil. can determine the decrease that occurs in NC clay & OC Soil		Online Google Meet/Zoom and Vinesa 4 X 50			0%
14	Students are able to understand perhit. Soil compression time	- Students can register. consolidation time through t50. - Students can determine the consolidation coefficient. Students can determine. consolidation time through t90.		Online Google Meet/Zoom and Vinesa 4 X 50			0%
15							0%
16							0%

Evaluation Percentage Recap: Case Study

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** 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.
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.