	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
Engineering geology *	2220102015	Geotechnical	T=2	P=0	ECTS=3.18	7	August 8, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Mochamad Firmansyah Sofianto, S.T., M.Sc., M.T.	Mochamad Firmansyah Sofianto, S.T., M.Sc., M.T.	Yogie Risdianto, S.T., M.T.

Learning model	**Case Studies**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

Program Objectives (PO)

PO - 1	Able to define the structure of the earth's layers, plate tectonic theory, and the concept of the geological cycle
PO - 2	Able to define types of earth's minerals and rocks, geological structures, and simple geological maps
PO - 3	Able to define the shape of the earth's surface and its formation processes, geological hazards and geological investigations

PLO-PO Matrix

P.O
PO-1
PO-2
PO-3

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																
PO-2																
PO-3																

Short Course Description

This course studies the study of earth sciences and disasters that occur on the earth's crust. In detail, this course explains technical geology in the field of civil engineering and its applications, understanding the structure of the earth's crust, earth's plates, geological cycles on the earth's surface, types of minerals and rocks found on earth.

References

Main :

1. Waltham, A.C. & C, Antony. 1994. Foundation of Engineering Geology. London: Blackie Academic & Professional.
2. Verhoef, PNW. 1989. Geologi untuk Teknik Sipil. Jakarta: Penerbit Erlangga.
3. Suharyadi. 1993. Geologi Teknik untuk Teknik Sipil. Ed-2. Yogyakarta: BP KMTS FT UGM.

Supporters:

Supporting lecturer	Dra. Nur Andajani, 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	Students can describe geology, geological processes, geological resources and geological hazards	Students are able to: - Describe geology - Explain geological processes, geological resources and geological hazards	**Criteria:** Perfect Score If Answered Correctly	Explanation and questions and answers and practice questions 2 X 50			0%
2	Students can describe endogenic processes	Students are able to: - Describe endogenic forces and endogenous natural forces - Explain earthquakes, orogenesis, epirogenesis, volcanism	**Criteria:** Perfect Score If Answered Correctly	Explanations and questions and answers for 2 X 50 exercises and questions			0%
3	Students can describe exogenic processes	Students are able to: - Describe endogenic forces - Explain weathering, erosion, mass wasting, sedimentation, exogenic	**Criteria:** Perfect Score if answered Correctly	Explanation and questions and answers and practice questions 2 X 50			0%
4	Students can describe the material that makes up the earth	Students are able to: - Describe the structure of the earth's layers - Explain the atmosphere, hydrosphere, lithosphere, rocks that form the lithosphere	**Criteria:** Perfect score if done right	Explanations and questions and answers and practice questions 2 X 50			0%
5	Students can describe ground movements	Students are able to: - Describe the meaning of landslides - Explain types of landslides, symptoms, causes and prevention of landslides.	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
6	Students can describe engineering geological exploration	Students are able to:- Explain exploration, exploitation, design and exploration planning	**Criteria:** Perfect Score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
7	Students can describe the exploration of engineering geology	Students are able to: - Explain the stages in planning exploration activities - Explain the things that need to be considered in exploration activities	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%

8	Students can describe engineering geological exploration	Students are able to: - Explain the selection of exploration methods - Explain exploration program planning - Explain the management of exploration activities	**Criteria:** Perfect Score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
9	-	-	**Criteria:** -	- 2 X 50			0%
10	Students can interpret and evaluate engineering geological maps	Students are able to: - Describe geological maps - Describe types of geological maps and maps related to them - Describe map scales	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
11	Students can interpret and evaluate engineering geological maps	Students are able to: - Describe the things that need to be considered when making a geological map - Explain the preparation stages for engineering geological mapping	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
12	Students can interpret and evaluate engineering geological maps	Students are able to: - Explain technical geological mapping field work - Explain the use of geotech in artesian water practice	**Criteria:** Perfect score if done right	Explanation and questions and answers and practice questions 2 X 50			0%
13	Students can explain the benefits of geology for civil engineering	Students are able to:- Describe the benefits of geology for civil engineering, especially in the field of soil mechanics	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			0%
14	Students can explain the benefits of geology for civil engineering	Students are able to:- Describe the application of geotechnical science to dam construction	**Criteria:** Perfect score if answered correctly.	Explanation and questions and answers and practice questions 2 X 50			0%
15	Students can explain the benefits of geology for civil engineering	Students are able to:- Describe engineering geology for road works	**Criteria:** Perfect score if answered correctly	Explanation and questions and answers and practice questions 2 X 50			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** 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.