	Universitas Negeri Surabaya Faculty of Social Sciences and Law Geography Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Structural Geology	8720202061		T=2	P=0	ECTS=3.18	2	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Nugroho Hari Purnomo, S.P., M.Si.

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	Able to use field geology practical tools correctly by practicing in groups, able to identify rock layers correctly by using data from measurements in the field through group work, able to identify various kinds of faults correctly by using data from measurements in the field through group work , able to identify fold shapes correctly by using data from measurements in the field through group work, able to identify various kinds of cracks/joints, cleavage, linearization correctly, and by using data from measurements in field work through group work, able to make geological slices properly and correctly using dip and strike measurement methods in the field, able to interpret geological maps correctly using various geological theories through individual work.
References	**Main :**

1. Billings, MP., 1972, Structural of Geology, 3 Edition, New Jersey : Printice Hall, Englewood Cliffs.
2. Danang Danarto, 2002, Pengantar Geologi Dasar, Surakarta: LPP dan UPT Penerbitan dan Pencetaan UNS.
3. Agung Mulyo, 2004, Pengantar Ilmu Kebumian, Pengetahuan Geologi Untuk Pemula, Bandung: Pustaka Setia.
4. Suharyadi, 2006, Pengantar Geologi Teknik, Yogyakarta: Biro Penerbit Tekni Sipil UGM
5. Fossen, 2013, Structural Geology, London: Cambridge
6. Smilie, 2012, Earth Dinamic, London: Cambridge

	Supporters:
Supporting lecturer	Drs. Agus Sutedjo, M.Si. Dr. Nugroho Hari Purnomo, S.P., M.Si.

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 are able to understand Structural Geology	1. Explain the meaning of Structural Geology 2. Explain Geological Structure and be able to differentiate it from Geological Structure 3. Explains the field of study of Structural Geology	**Criteria:** 1. Each test in essay form consists of 4 questions, with the following score weights. Question number 1 is given a score weight of 0 - 20 2. Question number 2 is given a weighting of 0 - 20. Question number 3 is given a weighting of 0 - 25. Question number 4 is given a weighting of 0 - 35. The total value is 100.	- Presentation - Discussion - Reflection 2 X 50			0%
2	Students are able to understand rock layers	1. Explain the meaning of Horizontal Plane 2. Explain the meaning of an inclined plane 3. Explain the laws that apply in the Coating Field 4. Explaining the misalignment of bedding planes 5. explains the meaning of azimuth, dip, and strike on the bedding plane	**Criteria:** 1. Each question is given a grade according to its level of difficulty, and each question is made with a different level of difficulty or several questions of the same level of difficulty 2. The total value is between 0 and 100	- Presentation- Discussion- Reflection 4 X 50			0%
3	Students are able to understand rock layers	1. Explain the meaning of Horizontal Plane 2. Explain the meaning of an inclined plane 3. Explain the laws that apply in the Coating Field 4. Explaining the misalignment of bedding planes 5. explains the meaning of azimuth, dip, and strike on the bedding plane	**Criteria:** 1. Each question is given a grade according to its level of difficulty, and each question is made with a different level of difficulty or several questions of the same level of difficulty 2. The total value is between 0 and 100	- Presentation- Discussion- Reflection 4 X 50			0%
4	Students are able to understand the characteristics of faults	1. Explain the meaning of faults and the process of their formation 2. Explain the names of the parts of the fault 3. Explain the signs of the shape of a fault 4. Explain the various forms of faults 5. Explain the relationship between fault development and environmental development 6. Explain azimuth, dip, and strike on faults	**Criteria:** 1. Structured Assignment Grades 2. 1. The total number of values is 100 3. 2. The assessment component consists of; 4. - On time submission of assignments (0 - 20%) 5. - Completeness of the material worked on (0 - 50%) 6. - Additional supporting information (0 - 20%) 7. - Neatness of task creation (0 - !0%)	- Presentation- Discussion- Reflection 4 X 50			0%

5	Students are able to understand the characteristics of faults	1. Explain the meaning of faults and the process of their formation 2. Explain the names of the parts of the fault 3. Explain the signs of the shape of a fault 4. Explain the various forms of faults 5. Explain the relationship between fault development and environmental development 6. Explain azimuth, dip, and strike on faults	**Criteria:** 1.Structured Assignment Grades 2.1. The total number of values is 100 3.2. The assessment component consists of; 4.- On time submission of assignments (0 - 20%) 5.- Completeness of the material worked on (0 - 50%) 6.- Additional supporting information (0 - 20%) 7.- Neatness of task creation (0 - !0%)	- Presentation-Discussion-Reflection 4 X 50			0%
6	Students are able to understand the characteristics of folds	1. Explain the meaning of folds and the process of their formation 2. Explain the names of the parts of the fold 3. Explain the various forms of folds 4. Explain azimuth, dip, and strike in rock folds	**Criteria:** 1.Structured Assignment Grades 2.1.The total number of marks is 100 3.2. The assessment component consists of 4.- On time submission of assignments (0 - 20%) 5.- Completeness of the material worked on (0 - 50%) 6.- Additional supporting information (0 - 20%) 7.- Neatness of tasks carried out (0 - 10%)	- Discussion-Presentation-reflection 4 X 50			0%
7	Students are able to understand the characteristics of folds	1. Explain the meaning of folds and the process of their formation 2. Explain the names of the parts of the fold 3. Explain the various forms of folds 4. Explain azimuth, dip, and strike in rock folds	**Criteria:** 1.Structured Assignment Grades 2.1.The total number of marks is 100 3.2. The assessment component consists of 4.- On time submission of assignments (0 - 20%) 5.- Completeness of the material worked on (0 - 50%) 6.- Additional supporting information (0 - 20%) 7.- Neatness of tasks carried out (0 - 10%)	- Discussion-Presentation-reflection 4 X 50			0%

8	UTS		**Criteria:** 1.Essay writing test 2.Each question item is given a weighted value according to the level of difficulty of each question 3.The total number of values is 0 to 100	2 X 50			0%
9	Students are able to understand the characteristics of joints, cleavage, lineation, foliation	1. Explain the meaning of joint, cleavage, lineation, and foliation2. Explain the process of joint formation, cleavage, lineation, and foliation3. Explain the various types of joints 4. Explain the various types of cleavage5. Explain the various types of lineation 6. Explain the various types of foliationKI.	**Criteria:** 1.Written test 2.- Each question item is given a weight according to its respective level of difficulty 3.- The total value is between 0 and 100	- Discussion-Reflection-Presentation 4 X 50			0%
10	Students are able to understand the characteristics of joints, cleavage, lineation, foliation	1. Explain the meaning of joint, cleavage, lineation, and foliation2. Explain the process of joint formation, cleavage, lineation, and foliation3. Explain the various types of joints 4. Explain the various types of cleavage5. Explain the various types of lineation 6. Explain the various types of foliationKI.	**Criteria:** 1.Written test 2.- Each question item is given a weight according to its respective level of difficulty 3.- The total value is between 0 and 100	- Discussion-Reflection-Presentation 4 X 50			0%
11	Students are able to use a geological compass and altimeter to measure geological structures in the field	1. Able to demonstrate azimuth, dip and strike readings using a geological compass2. Able to demonstrate measuring the thickness of rock layers 3. Able to read the altitude of places using an altimeter4. Able to calculate the thickness and volume of rock layers 5. able to calculate the elongation and shortening of faults	**Criteria:** 1.Written test 2.- Each question is given a grade according to its respective level of difficulty 3.- The total value is between 0 and 100 4.Structured Assignments 5.- The total number of values is 0 to 100 6.- Assignment assessment components: 1. Timeliness of submitting assignments 0 - 30%, 2. Accuracy of measurement results 0 - 40%, 3. Collaboration 0 - 30%	- Discussion-Training Group Assignment 2 X 50			0%

12	Students are able to use a geological compass and altimeter to measure geological structures in the field	1. Able to demonstrate azimuth, dip and strike readings using a geological compass2. Able to demonstrate measuring the thickness of rock layers 3. Able to read the altitude of places using an altimeter4. Able to calculate the thickness and volume of rock layers 5. able to calculate the elongation and shortening of faults	**Criteria:** 1.Written test 2.- Each question is given a grade according to its respective level of difficulty 3.- The total value is between 0 and 100 4.Structured Assignments 5.- The total number of values is 0 to 100 6.- Assignment assessment components: 1. Timeliness of submitting assignments 0 - 30%, 2. Accuracy of measurement results 0 - 40%, 3. Collaboration 0 - 30%	- Discussion-Training Group Assignment 2 X 50			0%
13	Students are able to measure layer thickness, dip and strike of bedding planes, dip and strike of fault planes, dip and strike of fold wings.	1. Able to measure the thickness of rock layers in the field2. Able to measure azimuth, dip and strike of inclined plane layers in the field3. Able to carry out azimuth, dip and strike measurements of rock folds in the field 4. Able to carry out azimuth, dip and strike measurements of fault planes in the field	**Criteria:** 1.Structured Assignment Grades 2.The assessment components consist of; 3.- On time submission of assignments 0 - 30% 4.- Accuracy of measurement results 0 - 40% 5.- Cooperation 0 - 30% 6.The total number of values is 0 to 100	- Measurements in the field - Group Assignment Book 2 X 50			0%
14	Students are able to measure layer thickness, dip and strike of bedding planes, dip and strike of fault planes, dip and strike of fold wings.	1. Able to measure the thickness of rock layers in the field2. Able to measure azimuth, dip and strike of inclined plane layers in the field3. Able to carry out azimuth, dip and strike measurements of rock folds in the field 4. Able to carry out azimuth, dip and strike measurements of fault planes in the field	**Criteria:** 1.Structured Assignment Grades 2.The assessment components consist of; 3.- On time submission of assignments 0 - 30% 4.- Accuracy of measurement results 0 - 40% 5.- Cooperation 0 - 30% 6.The total number of values is 0 to 100	- Measurements in the field - Group Assignment Book 2 X 50			0%
15	Students are able to interpret geological maps	1. Able to make cross-sections of rock layers based on measurements in the field2. able to create cross-sections of rock layers based on geological maps3. Able to interpret geological maps regarding the age sequence of rock layers	**Criteria:** 1.Structured assignment grades 2.The assessment components consist of: 3.- On time submission of assignments 0 - 30% 4.- Accuracy of interpretation results 0 - 50% 5.- Cooperation 0 - 20% 6.The total number of values is between 0 and 100	- Discussion-Training - Group Assignment 2 X 50			0%

16	UAS		**Criteria:** 1.ESSAY WRITTEN TEST 2.Each question is given a weighted value according to its respective level of difficulty 3.The total number of values is 0 to 100	2 X 50			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.