	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
Flat Side Measurement and Practical		2220103080			T=3	P=0	ECTS=4.77	1	July 18, 2024
AUTHORIZATION		**SP Developer**			**Course Cluster Coordinator**			**Study Program Coordinator**	
		....			....			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)
	PLO-PO Matrix
	P.O
	PO Matrix at the end of each learning stage (Sub-PO)
	P.O / Week 1–16

Short Course Description: Introduction to IUT and map knowledge, Cartesian Coordinate System, knowledge of tools, straight lines, right angles in the field and making maps with simple tools, measurement accuracy with a spirit level plane, determining height differences with a plane.

References	Main :

1. Wongsotjitro, S. 1985. Ilmu Ukur Tanah. Penerbit Kanisius.
2. Brinker, Russel C, dan Wolf, Paul R. 1986. Dasar - dasar Pengukuran Tanah (Surveying). Penerbit Erlangga
3. Amir, Z. 1988. Dasar-dasar Pengukuran Terestris Dan Pemetaan Situasi. Jurusan Teknik Sipil FakultasTeknik, Universitas Andalas.
4. Muhamadi, M. 1986. Ilmu Ukur Tanah I. Fak.Tek.Sipil & Perencanaan Jurusan Teknik Sipil Institut Teknologi 10 Nopember Surabaya

Supporters:

Supporting lecturer	DIDIEK PURWADI Satriana Fitri Mustika Sari, S.T., M.T. Danayanti Azmi Dewi Nusantara, S.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	Able to explain IUT and create maps according to correct standards.	Explain the meaning of IUT and map requirements. Explain the types of maps. Explain the branches of geodesy and land surveying.	**Criteria:** Full marks if you can answer everything correctly	Lecture, Question and answer and practice 3 X 50			0%
2	Able to create a straight line blocked by buildings	determining perpendicular lines, measuring obstructed distances Determining measurement error calculations.	**Criteria:** Full marks are obtained if the types and calculations are explained correctly	Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field			0%
3	Able to carry out situation mapping measurements	can measure the basic framework, can map with simple tools	**Criteria:** Full marks are obtained if the types and calculations are explained correctly	Lectures, discussions, questions and answers and practical demonstrations in the 3 X 50 field			0%
4	Able to determine and calculate height differences	Determine the height difference. Take level measurements	**Criteria:** 1.Full value is obtained if the coordinates of points and 2.The writing and completeness of the report is correct	Exercises. 3 X 50			0%
5	Able to calculate height differences	calculating distance Calculating height difference	**Criteria:** 1.Full value is obtained if the coordinates of points and 2.The writing and completeness of the report is correct	Exercises. 3 X 50			0%
6	Able to calculate height differences in one go	Explaining flat, elongated planes. Calculating the difference in height in one go	**Criteria:** 1.Full marks are obtained if you know and understand the operation of the equipment 2.The writing and completeness of the report is correct	Lectures, discussions 3 X 50			0%
7	Able to determine angles, distances and height differences in longitudinal and transverse profiles	Calculate angles, distances, height differences. Draw long and transverse profiles	**Criteria:** Full marks and correct writing and completeness of the report	Lectures, discussions, exercises, practice in the field. 3 X 50			0%
8	UTS	-	**Criteria:** Full marks if you can answer everything correctly	2 X 50			0%
9	Able to determine the accuracy of measurements using a spirit level.	Calculating the accuracy of the water level height difference. Explain measurement accuracy and height difference.	**Criteria:** 1.Full marks are obtained if there is no difference in the high accuracy values 2.The writing and completeness of the report is correct	Lectures and practical training in the field. 3 X 50			0%

10	Able to determine the accuracy of measurements using a spirit level.	Calculating the accuracy of the water level height difference. Explain measurement accuracy and height difference.	**Criteria:** 1. Full marks are obtained if there is no difference in the high accuracy values 2. The writing and completeness of the report is correct	Lectures and practical training in the field. 3 X 50			0%
11	Able to determine measurements of flat, longitudinal edges	Calculate the longitudinal flat edge measurements. Explains the measurement of a flat, longitudinal edge	**Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form.	Lectures, discussions, exercises and practice in the field. 3 X 50			0%
12	Able to determine measurements of flat, longitudinal edges	Calculate the longitudinal flat edge measurements. Explains the measurement of a flat, longitudinal edge	**Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form.	Lectures, discussions, exercises and practice in the field. 3 X 50			0%
13	Able to determine the flatness of the profile	Calculate profile flatness measurements. Explains the measurement of profile flatness	**Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form.	Lectures, discussions, exercises. and practice in the field. 3 X 50			0%
14	Able to determine the flatness of the profile	Calculate profile flatness measurements. Explains the measurement of profile flatness	**Criteria:** Full marks are obtained if the situation mapping image at a certain scale matches the original form.	Lectures, discussions, exercises. and practice in the field. 3 X 50			0%
15	Able to create maps correctly according to standards	Calculate distance measurements, height differences and angles. Draw a map	**Criteria:** Full marks if you explain the types and calculations correctly	exercise and practice on the 3 X 50 field			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.