



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

Document Code

**SEMESTER LEARNING PLAN**

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>			<b>SEMESTER</b>	<b>Compilation Date</b>										
Land Surveying and Mapping Science	99993940104032		T=2	P=2	ECTS=6.36	3	July 16, 2024										
<b>AUTHORIZATION</b>		<b>SP Developer</b>	<b>Course Cluster Coordinator</b>			<b>Study Program Coordinator</b>											
		.....	.....			Dr. Anita Susanti, S.Pd., M.T.											
<b>Learning model</b>	<b>Case Studies</b>																
<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program that is charged to the course</b>																
	<b>Program Objectives (PO)</b>																
	<b>PLO-PO Matrix</b>																
		P.O															
	<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																
	P.O	Week															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Short Course Description</b>	Measurement to determine height or height difference between two points. Spirit level measurements are very important for obtaining data for mapping, planning and implementation work.																
<b>References</b>	<b>Main :</b>																
	1. : [1]. Muhamadi, M, 1999, DiktatIlmu Ukur Tanah,Teknik Sipil dan Perencanaan, JurusanTeknik Sipil,InstitutTeknologi Sepuluh Nopember Surabaya.[2]. Wongsojitro, S, 1985.IlmU Ukur Tanah ,Penerbit Kanisius.[3]. Brinker, Russel C, dan Wolf,Paul R, 1986, Dasar - dasar Pengukuran Tanah ( Surveying), PenerbitErlangga.[4].Amir, Z, 1988, Dasar-dasar Pengukuran Terestris DanPemetaan Situasi, Jurusan Teknik Sipil FakultasTeknik, Universitas Andalas.																
	<b>Supporters:</b>																
<b>Supporting lecturer</b>	Dr. Ir. H. Soeparno, M.T. Amanda Ristriana Pattisinai, S.T., M.T. R. Endro Wibisono, S.Pd., 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.	1. Explain the meaning of IUT and map requirements. 2. Explain the various types of maps. 3. Explain the branches of geodesy and land measurement	<b>Criteria:</b> Full marks if you can answer everything correctly	Lecture Question and answer and practice 4 X 50			0%										

2	Able to carry out direct and indirect measurements and calculations.	1. Explain the various types of measurement work. 2. Determine the measurement error calculation.	<b>Criteria:</b> Full marks are obtained if the types and calculations are explained correctly	Question and answer discussion lectures and practical demonstrations in the 4 X 50 field		0%
3	Able to carry out direct and indirect measurements and calculations.	1. Explain the various types of measurement work. 2. Determine the measurement error calculation.	<b>Criteria:</b> Full marks are obtained if the types and calculations are explained correctly	Question and answer discussion lectures and practical demonstrations in the 4 X 50 field		0%
4	Able to determine azimuth and point coordinates	1. Determine the azimuth of two fixed points 2. Determine the coordinates of the points	<b>Criteria:</b> Full marks are obtained if the azimuth angle image is correct, the azimuth angle value and the point coordinates are correct	Practice questions 4 X 50		0%
5	Able to determine azimuth and point coordinates	1. Determine the azimuth of two fixed points 2. Determine the coordinates of the points	<b>Criteria:</b> Full marks are obtained if the azimuth angle image is correct, the azimuth angle value and the point coordinates are correct	Exercises. 4 X 50		0%
6	Able to determine the position of point coordinates using the Cartesian Coordinate System	1. Determine the coordinate position of the point. 2. Calculate and draw the Cartesian Coordinate System.	<b>Criteria:</b> Full marks are obtained if the coordinates of the point and the written layout of the complete report are correct	Exercises. 4 X 50		0%
7	Able to know about tools.	1. Explain the various tools. 2. Explaining Tool Knowledge.	<b>Criteria:</b> 1.Full marks are obtained if you know and understand the operation of the equipment 2.The completeness of the report is written correctly	Field practical discussion lecture 4 X 50		0%
8	UTS	-	<b>Criteria:</b> Full marks if you can answer everything correctly	- 2 X 50		0%
9	Able to determine angles and make maps in the field.	Calculating right angles Explaining right angles in the field Making maps with simple tools.	<b>Criteria:</b> Full marks and correct writing and completeness of the report	Lectures, discussions, practical exercises in the field. 4 X 50		0%
10	Able to determine angles and make maps in the field	Calculating right angles Explaining right angles in the field Making maps with simple tools.	<b>Criteria:</b> Full marks and correct writing and completeness of the report	Lectures, discussions, practical exercises in the field. 4 X 50		0%
11	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 differences.	<b>Criteria:</b> 1.Full marks are obtained if there is no difference in the high accuracy values 2.The completeness of the report is written correctly	Lectures and practical training in the field. 4 X 50		0%
12	Able to determine longitudinal and profile measurements	Calculate the longitudinal flat edge measurements. Explaining the measurement of a longitudinal flat profile. Calculating the measurement of a profile flat profile	<b>Criteria:</b> Full marks if you can answer everything correctly	Lectures, discussions, exercises and practice in the 4 X 50 field		0%

13	Able to determine longitudinal and profile measurements	Calculate the longitudinal flat edge measurements. Explaining the measurement of a longitudinal flat profile. Calculating the measurement of a profile flat profile	<b>Criteria:</b> Full marks if you can answer everything correctly	Lectures, discussions, exercises and practice in the field. 4 X 50			0%
14	Able to determine longitudinal and profile measurements	Calculate the longitudinal flat edge measurements. Explaining the measurement of a longitudinal flat edge. Calculating the measurement of a flat profile profile	<b>Criteria:</b> 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. 4 X 50			0%
15	Able to create maps correctly according to standards	Calculate distance measurements, height differences and angles. Draw a map	<b>Criteria:</b> Full marks if you can answer everything correctly	training and practice on the 4 X 50 field			0%
16							0%

#### Evaluation Percentage Recap: Case Study

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.