

LAND SURVEYING

**(Learning Analysis, Study Plan, Assessment & Evaluation Plan,
Short Syllabus, Assignment Plan)**



LAND SURVEYING

S1 GEOGRAPHY EDUCATION

Faculty of Social Sciences And Law

UNIVERSITAS NEGERI SURABAYA



Universitas Negeri Surabaya
Faculty of Social Science and Law
Geography Education Department

Document Code

Lesson Plan

COURSE		Code	Cluster	Credits		Semester	Compilation Date
LAND SURVEYING		8720202076	Engineering Geography	T =0,68	P = 1,41	2	August 5, 2017
AUTHORIZATION		Lesson Plan Developer		Coordinator		Head of Study Program	
		Dr. Muzayanah, MT.		Dr. Muzayanah, MT.		Dra. Ita Mardiani Zain, M.Kes	
Program Learning Outcome (PLO)	Program Learning Outcomes (PLO)						
	PLO-3	Able to process, analyze, present geosphere data and information using geospatial technology for geography learning and research					
	PLO-5	Able to demonstrate independent and collaborative performance that produces quality and measurable results					
	PLO-9	Able to apply regional theory for sustainable regional planning and development					
	PLO-11	Demonstrate a responsible attitude towards work in their field of expertise independently					
	Course Learning Outcome (CLO)						
	CLO-3	Able to process, analyze, present data and information on mapped areas using theodolites for geography learning and research					
	CLO-5	Able to demonstrate independent and collaborative performance that produces quality maps					
	CLO-9	Able to apply mapping theory in sustainable regional planning and development					
	CLO-11	Demonstrate a responsible attitude for planning, measuring, calculating and plotting measurement results					
	Lesson Learning Outcome (LLO)						
	LLO-1	Able to implement the concept of Surveying Land in preparing mapping plans (coordinate systems, types of surveys and maps (CLO-3, CLO-5, CLO-9))					
	LLO-2	Able to analyze the horizontal position of measurement data (CLO-3, CLO-5, CLO-11)					
	LLO-3	Able to operate theodolite, read measuring tubs, calculate distances and analyze the coordinates of the aiming point (CLO-3, CLO-5, CLO-11)					
	LLO-4	Able to create mapping area polygons (CLO-3, CLO-5)					
LLO-5	Able to analyze the difference in height of the mapping area (CLO-3, CLO-5, CLO-11)						
LLO-6	Able to create map of measurement results using geospatial technology (CLO-3, CLO-5, CLO-9, CLO-11)						

	LLO-7	Able to analyze the mapping area (CLO-3, CLO-5, CLO-9, CLO-11)						
Correlation between PLO/CLO to LLO								
		LLO-1	LLO-2	LLO-3	LLO-4	LLO-5	LLO-6	LLO-7
	PLO-3/CLO-3	√	√	√	√	√	√	√
	PLO-5/CLO-5	√	√	√	√	√	√	√
	PLO-9/CLO-9	√					√	√
	PLO-11/CLO-11		√	√		√	√	√
Course Description	Land Surveying is a course that implements mapping theory (basic understanding of Soil Surveying, coordinate systems, positioning, measuring polygon methods, measuring tachimetric methods, drawing topographic maps and determining area). Assessment is done by performance, written test and portfolio.							
Learning Materials/ Topics	Studying the combination of geography and mapping with the help of geospatial technology. This study material contains basic understanding of surveying, coordinate systems, positioning, measuring the polygon method, measuring the tachimetric method, drawing topographic maps and determining area. The material of this study is expected to be able to lead students to master and apply the science of surveying as a practitioner or teacher. For practitioners, this study can be used as a basis for work in sustainable regional planning and development. For teachers, this study can introduce students to the procedure for making maps with geospatial technology using data from measurements in the field.							
Learning Materials/ Topics	Learning materials: 1. Introduction: introduction to geometry, types of surveys, and maps 2. Measuring and measuring instruments: theodolite, distance measuring device, unit system 3. Knowledge of distances and angles, point positions, understanding of north and azimuth directions, calculation of distance/slope/azimuth/angle with a coordinate system 4. Polygons: intent, closed polygons, open polygons, requirements, measurement methods, calculations 5. Tachimetric method: principles, formulas, approaches, and measurement of height difference with tachimetry 6. Topographic maps: mapping datums, map scales, contour lines, situation mapping 7. Area Calculation							
References	Primary							
		<ol style="list-style-type: none"> 1. Abidin Hasanuddin Z., 2008. Penentuan posisi dengan GPS dan aplikasinya. Jakarta : Pradnya Paramita 2. Basuki, Slamet. 2006. <i>Ilmu Ukur Tanah</i>. Yogyakarta: Universitas Gadjah Mada Press 3. Heinz, Frick, 1989, <i>Ilmu dan alat ukur tanah</i>, Yogyakarta : Kanisius. 20th.2006 						

	4. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita.						
	Supplementary						
	5. Abidin Hasanuddin Z., 2002. Survey dengan GPS. Jakarta : Pradnya Paramita						
	6. Petunjuk praktikum Ukur Tanah Pendidikan Geografi 2018						
Lecturer(s)	- Dr. Muzayanah, MT. - Dr. Eko Budiyanto, M.Si.						
Prerequisite	-						
Week	Learning Objectives	Assessment		Learning Activities and Time Allotment		Learning Sources	Scoring
		Indicators	Criteria /Form/ Type	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	LLO-1: Able to implement the concept of Soil Survey in preparing mapping plans (coordinate systems, types of surveys and maps)	1.1. Explain the concept of measuring land	Criteria : Description rubric	Cooperative Learning Studying Minutes face to face : 1 (2x50') [minutes face to face + FGD : (1+1) x (2X60')]	Vlearning http://vlearning.unesa.ac.id	Theory: - Definition of survey - Geometric stages of mapping - Coordinates used in Indonesia References: - Book 2 - Book 3	5
2-3	LLO-2: Able to analyze the horizontal position of measurement data	2.1. Understanding azimuth 2.2. Able to analyze flat distance 2.3. Able to analyze the coordinates of the point of view	Criteria: Performance rubric	Project Base Learning Studying <i>Small Group Discussion</i> Minutes face to face: 2 (2x50') Task 1 The results of the analysis of the coordinates of the point of view	Vlearning http://vlearning.unesa.ac.id	Theory: - azimuth - Flat distance - Position coordinates of the point of view References: - Book 2 - Book 3	15

				Minutes Independent Tasks + discussion (2+2) x (2X60')]			
4-5	LLO-3: Able to operate theodolite, read measuring tubs, calculate distances and analyze the coordinates of the aiming point	3.1. Setting theodolite 3.2. Set initial coordinates 3.3. Reading the measuring tub 3.4. Analyze distance from measurement data 3.4. Analyzing the coordinates of the aiming point from the measurement data	Criteria: Performance rubric	Project Base Learning Direct Instruction <i>Small Group</i> <i>Discussion</i> Minutes face to face: 2 (2x50') Task 2 Practicum report flat distance and point position Minutes Independent Tasks + discussion: (2+2) x (2X60')	Vlearning http://vlearning.unesa.ac.id	Theory: - Theodolite - Starting point (starting peg/BM) - Flat distance - 2D Cartesian Coordinates References: - Book 1 - Book 5 - Book 6	15
6-7	LLO-4: Able to create mapping area polygons	4.1. Explaining about polygons 4.2. Preparing surveying preparations (plans, aiming points, surveying tables)	Criteria : Description rubric	Project Base Learning Direct Instruction <i>Small Group</i> <i>Discussion</i> Minutes face to face: 2 (2x50') Task 3 Correcting measurement results Minutes Independent Tasks + discussion: (2+2) x (2X60')	Vlearning http://vlearning.unesa.ac.id	Theory: - Polygon - Polygon count - correction of measurement results References: - Book 2 - Book 3 - Book 4	10
8	Sub Summative Exam (SSE)						

9-12	LLO-5: Able to analyze the difference in the height of the mapping area	5.1. Explain the difference in height 5.2. Obtaining high difference data 5.3. Analyzing the difference in the height of the measurement results	Criteria : Description rubric	Project Base Learning <i>Small Group Discussion</i> Minutes face to face: 4 (2x50') Task 4 Polygon and height difference practicum report Minutes Independent Tasks + discussion: (4 + 4) x (2X60')	Vlearning http://vlearning.unesa.ac.id	Theory: - tachimetric method References: - Book 2 - Book 3 - Book 4 - Book 6	30
13-14	LLO-6: Able to create maps of measurement results using geospatial technology	6.1. Creating topographic maps 6.2. Creating a situation map	Criteria : Description rubric	Project Base Learning Direct Instruction Minutes face to face: : 2 (2x50') Task 5 Situation map and cross-profile from field measurements Minutes Independent Tasks + discussion: (2+2) x (2X60')]	Vlearning http://vlearning.unesa.ac.id	Theory: - Cartography - Contour map - Transverse profile References: - Book 2 - Book 3 - Book 4 - Book 6	20
15	LLO-7: Able to analyze the area of the mapping	7. Analyze area	Criteria: Performance rubric	Project Base Learning <i>Small Group Discussion</i> Minutes face to face 1 (2x50')	Vlearning http://vlearning.unesa.ac.id	Theory: - Area calculation References: - Book 2 - Book 3 - Book 4	5

				<p>Task 6 Report on the results of the analysis of the area of the mapping</p> <p>Minutes Independent Tasks + discussion: (1 + 1) x (2X60')</p>		- Book 6	
16	Final Exam						

I. Semester Lesson Plan

II. Assessment and Evaluation Portfolio

Week	PLO	CLO	LLO	Indicator	Equation (weight %)		Score (%)	Student Score (0-100)	(Student Score) x (weight%)	Course PLO Achievement (%)
1	PLO-3 PLO-5 PLO-9	CLO-3 CLO-5 CLO-9	LLO-1	1.1. Explain the concept of measuring land			5			
2-3	PLO-3 PLO-5 PLO-11	CLO-2 CLO-5 CLO-11	LLO-2	2.1. Understanding azimuth 2.2. Able to analyze flat distance 2.3. Able to analyze the coordinates of the point of view	Exercise 1		10			
4-5	PLO-3 PLO-5 PLO-11	CLO-3 CLO-5 CLO-11	LLO-3	3.1. Setting theodolite 3.2. Set initial coordinates 3.3. Reading the measuring tub 3.4. Analyze distance from measurement data 3.4. Analyzing the coordinates of the aiming point from the measurement data	Exercise 2		15			
6-7	PLO-3 PLO-5	CLO-3 CLO-5	LLO-4	4.1. Explaining about polygons 4.2. Preparing surveying preparations (plans, aiming points, surveying tables)	Exercise 3		10			
8										
9-12	PLO-3 PLO-5 PLO-11	CLO-3 CLO-5 PLO-11	LLO-5	5.1. Explain the difference in height 5.2. Obtaining high difference data 5.3. Analyzing the difference in the height of the measurement results	Exercise 4		30			


13-14	PLO-3 PLO-5 PLO-9 PLO-11	CPL-3 CPL-5 CPL-9 CPL-11	LLO-6	66.1. Creating topographic maps 6.2. Creating a situation map	Exercise 5		20			
15	PLO-3 PLO-5 PLO-9 PLO-11	CPL-3 CPL-5 CPL-9 CPL-11	LLO-7	7. Analyze area	Exercise 6		10			
16	Final Exam									
Total bobot (%)						100	100			
Student's final grade ($\sum(\text{score}) \times (\text{weight}\%)$)										

Catatan: CLO = *Courses Learning Outcomes*, LLO = *Lesson Learning Outcomes*

III. Assessment of CLO Achievement in subject : Land Surveying


No	CLO in subject Surveying	Achievement value (0-100)	Achievement of CPL at subject (%)
1	PLO-3: Able to process, analyze, present geosphere data and information using geospatial technology for geography learning and research		-Excellence 15% -Good 54% -Satisfy 29% -False 3%
2	PLO-5: Able to demonstrate independent and collaborative performance that produces quality and measurable results		-Excellence 4% -Good 62% -Satisfy 33% -False 2%
3	PLO-9: Able to apply regional theory for sustainable regional planning and development		-Excellence 4% -Good 62% -Satisfy 34% -False 0%
4	PLO-11: Demonstrate a responsible attitude towards work in their field of expertise independently		-Excellence 12% -Good 54% -Satisfy 32% -False 2%

IV. Syllabus of Courses

 UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT		
SORT SYLLABUS	Name	Surveying
	Kode	8720202076
	Kredit	2
	Semester	5
Course Description		Land Surveying is a course that implements mapping theory (basic understanding of Soil Surveying, coordinate systems, positioning, measuring polygon methods, measuring tachimetric methods, drawing topographic maps and determining area). Assessment is done by performance, written test and portfolio.
Course Learning Outcome (CLO)		
CLO-3	Able to process, analyze, present data and information on mapped areas using theodolites for geography learning and research	
CLO-5	Able to demonstrate independent and collaborative performance that produces quality maps	
CLO-9	Able to apply mapping theory in sustainable regional planning and development	
CLO-11	Demonstrate a responsible attitude for planning, measuring, calculating and plotting measurement results	
Lesson Learning Outcome (LLO)		
LLO-1	Able to implement the concept of Surveying Land in preparing mapping plans (coordinate systems, types of surveys and maps (CLO-3, CLO-5, CLO-9))	
LLO-2	Able to analyze the horizontal position of measurement data (CLO-3, CLO-5, CLO-11)	

LLO-3	Able to operate theodolite, read measuring tubs, calculate distances and analyze the coordinates of the aiming point (CLO-3, CLO-5, CLO-11)
LLO-4	Able to create mapping area polygons (CLO-3, CLO-5)
LLO-5	Able to analyze the difference in height of the mapping area (CLO-3, CLO-5, CLO-11)
LLO-6	Able to create map of measurement results using geospatial technology (CLO-3, CLO-5, CLO-9, CLO-11)
LLO-7	Able to analyze the mapping area (CLO-3, CLO-5, CLO-9, CLO-11)
Learning Materials/ Topics	
	<p>Learning materials:</p> <ol style="list-style-type: none"> 1. Introduction: introduction to geometry, types of surveys, and maps 2. Measuring and measuring instruments: theodolite, distance measuring device, unit system 3. Knowledge of distances and angles, point positions, understanding of north and azimuth directions, calculation of distance/slope/azimuth/angle with a coordinate system 4. Polygons: intent, closed polygons, open polygons, requirements, measurement methods, calculations 5. Tachimetric method: principles, formulas, approaches, and measurement of height difference with tachimetry 6. Topographic maps: mapping datums, map scales, contour lines, situation mapping 7. Area Calculation
References	
	Primary
	<ol style="list-style-type: none"> 1. Abidin Hasanuddin Z., 2008. Penentuan posisi dengan GPS dan aplikasinya. Jakarta : Pradnya Paramita 2. Basuki, Slamet. 2006. <i>Ilmu Ukur Tanah</i>. Yogyakarta: Universitas Gadjah Mada Press 3. Heinz, Frick, 1989, <i>Ilmu dan alat ukur tanah</i>, Yogyakarta : Kanisius. 20th.2006 4. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita.
	Supplementary
	<ol style="list-style-type: none"> 5. Abidin Hasanuddin Z., 2002. Survey dengan GPS. Jakarta : Pradnya Paramita 6. Petunjuk praktikum Ukur Tanah Pendidikan Geografi. 2018
Prerequisite	
-	


V. Task Plan 1

		UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT			
STUDENT TASK PLAN					
COURSE	Land Surveying				
CODE	8720202076	sks	2	SEMESTER	5
Lecturer	1. Dr. Muzayanah, MT. 2. Dr. Eko Budianto, M.Si.				
TASK FORM			TASK WORKING TIME		
Structured Tasks			Week 2-3		
TASK TITLE					
Horizontal position					
<i>LLO = Lesson Learning Outcomes</i>					
LLO-1: Able to implement the concept of Soil Survey in preparing mapping plans (coordinate systems, types of surveys and maps) LLO-2 : Able to analyze the horizontal position of measurement data					
TASK DESCRIPTION					
This assignment aims to make students able to analyze the horizontal position of the measurement data					
TASK WORKING METHODS					
1. Understanding azimuth 2. Understand BA, BB and BT 3. Analyze flat distance 4. Analyze the position of the coordinates of the point of view					
OUTPUT					
a. Object: - flat distance - New point coordinates b. Output: The answer sheet for the analysis of the flat distance and the Cartesian coordinates of the aiming point					
INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT					
1. Performance Results: Results of Analysis and description (weight 100%) a. Accuracy in analyzing flat distances (50%) b. Accuracy in analyzing the coordinates of the aiming point (50%) 2. Values between 0 to 100					
IMPLEMENTATION SCHEDULE					
Weeks 2 and 3 on the implementation of the Land Surveying tasks					
ETC					
1. Tasks are carried out independently and with full responsibility 2. The assessment of this task is 15% of 100% of the entire CLO					
DAFTAR RUJUKAN					
1. Basuki, Slamet. 2006. <i>Ilmu Ukur Tanah</i> . Yogyakarta: Universitas Gadjah Mada Press 2. Heinz, Frick, 1989, <i>Ilmu dan alat ukur tanah</i> , Yogyakarta : Kanisius. 20 th .2006					

Reference


1. Abidin Hasanuddin Z., 2008. Penentuan posisi dengan GPS dan aplikasinya. Jakarta : Pradnya Paramita
2. Abidin Hasanuddin Z., 2002. Survey dengan GPS. Jakarta : Pradnya Paramita
3. Petunjuk praktikum Ukur Tanah Pendidikan Geografi. 2018

Task Plan 3

	UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT		
STUDENT TASK PLAN			
COURSE	Land Surveying		
CODE	8720202076	sks	2
		SEMESTER	5
Lecturer	<ol style="list-style-type: none"> 1. Dr. Muzayanah, MT. 2. Dr. Eko Budianto, M.Si. 		
TASK FORM		TASK WORKING TIME	
Structured Tasks		Week 6-7	
TASK TITLE			
Flat distance and point of view coordinates			
LLO = <i>Lesson Learning Outcomes</i>			
LLO-4 :			
Able to create mapping area polygons			
TASK DESCRIPTION			
This assignment aims to enable students to create and analyze mapping area polygons			
TASK WORKING METHODS			
<ol style="list-style-type: none"> 1. Create a polygon layout 2. Determine point 0 and aiming point 3. Prepare survey table 			
OUTPUT			
<ol style="list-style-type: none"> a. Cultivated Object: <ol style="list-style-type: none"> 1. Create a polygon layout 2. Determine point 0 and aiming point 3. Prepare survey table b. Output: <p>Report</p> 			
INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT			
<ol style="list-style-type: none"> 1. Performance Results: Results of Analysis and description (weight 70%) <ol style="list-style-type: none"> a. Accuracy in theodolite setting (20%) b. Accuracy in reading measuring tubs (20%) c. Accuracy in analyzing flat distances (10%) d. Accuracy in analyzing the coordinates of the aiming point (20%) 2. Active in group work (weight 10%) <ol style="list-style-type: none"> a. Active 10% b. Less active 5% c. Inactive 0% 3. Punctuality in in setting theodolite (20% weight) <ol style="list-style-type: none"> a. On time (30 minutes) 20% b. Late less than 15 minutes 5% 			

c. More than 15 minutes late 0%	
4. Values between 0 to 100	
IMPLEMENTATION SCHEDULE	
Weeks 6 and 7 on the implementation of the Land Surveying tasks	
ETC	
1. Tasks are carried out independently and with full responsibility	
2. The assessment of this task is 15% of 100% of the entire CLO	
DAFTAR RUJUKAN	
1. Basuki, Slamet. 2006. <i>Ilmu Ukur Tanah</i> . Yogyakarta: Universitas Gadjah Mada Press	
2. Heinz, Frick, 1989, <i>Ilmu dan alat ukur tanah</i> , Yogyakarta : Kanisius. 20 th .2006	
3. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita.	

Plan Task 4

		UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT			
STUDENT TASK PLAN					
COURSE	Land Surveying				
CODE	8720202076	sks	2	SEMESTER	5
Lecturer	1. Dr. Muzayanah, MT. 2. Dr. Eko Budianto, M.Si.				
TASK FORM			TASK WORKING TIME		
Structured Tasks			Week 9-12		
TASK TITLE					
Height difference					
LLO = <i>Lesson Learning Outcomes</i>					
LLO-5: Able to analyze the difference in the height of the mapping area					
TASK DESCRIPTION					
This assignment aims to make students able to analyze the difference in height of the mapping area					
TASK WORKING METHODS					
1. Obtaining different height data 2. Analyze the difference in the height of the measurement results					
OUTPUT					
a. Cultivated Object: - determine the measuring point - analyze the height difference. b. Output: Report					
INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT					
1. Performance Results: Results of Analysis and description (weight 70%) a. Accuracy in determining the aiming point (20%) b. Accuracy in analyzing the difference in height (50%) 2. Active in group work (weight 10%) a. Active 10% b. Less active 5% c. Inactive 0% 3. Punctuality in submitting assignments (20% weight)					


<ul style="list-style-type: none"> a. On time (30 minutes) 20% b. Late less than 15 minutes 5% c. More than 15 minutes late 0% <p>4. Values between 0 to 100</p>
IMPLEMENTATION SCHEDULE
Weeks 9 until 1 on the implementation of the Land Surveying tasks
ETC
<ul style="list-style-type: none"> 1. Tasks are carried out independently and with full responsibility 2. The assessment of this task is 30% of 100% of the entire CLO
DAFTAR RUJUKAN
<ul style="list-style-type: none"> 1. Basuki, Slamet. 2006. Ilmu Ukur Tanah. Yogyakarta: Universitas Gadjah Mada Press 2. Heinz, Frick, 1989, Ilmu dan alat ukur tanah, Yogyakarta : Kanisius. 20th.2006 3. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita. 4. Petunjuk praktikum Ukur Tanah Pendidikan Geografi. 2018

Plan Task 5

	UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT				
STUDENT TASK PLAN					
COURSE	Land Surveying				
CODE	8720202076	sks	2	SEMESTER	5
Lecturer	<ul style="list-style-type: none"> 1. Dr. Muzayanah, MT. 2. Dr. Eko Budianto, M.Si. 				
TASK FORM			TASK WORKING TIME		
Structured Tasks			Week 13-14		
TASK TITLE					
Plotting of measurement result data					
LLO = <i>Lesson Learning Outcomes</i>					
LLO-6: Able to create map of measurement results using geospatial technology					
TASK DESCRIPTION					
Able to create maps of measurement results using geospatial technology					
TASK WORKING METHODS					
<ul style="list-style-type: none"> 1. Create a contour map 2. Creating a situation map 					
OUTPUT					
<ul style="list-style-type: none"> a. Cultivated Object: <ul style="list-style-type: none"> - Create contour maps from the results of field measurements - Creating a situation map from the results of field measurements b. Output: <ul style="list-style-type: none"> - situation map 					
INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT					
<ul style="list-style-type: none"> 1. Performance Results: Results of Analysis and description (weight 70%) <ul style="list-style-type: none"> a. Accuracy in creating contour maps (35%) b. Accuracy in creating situation maps (35%) 2. Active in group work (weight 10%) 					

<ul style="list-style-type: none"> a. Active 10% b. Less active 5% c. Inactive 0% <p>3. Punctuality in submitting assignments (20% weight)</p> <ul style="list-style-type: none"> a. On time (60 minutes) 20% b. Late less than 15 minutes 5% c. More than 15 minutes late 0% <p>4. Values between 0 to 100</p>
IMPLEMENTATION SCHEDULE
Weeks 13 until 14 on the implementation of the Land Surveying tasks
ETC
<ul style="list-style-type: none"> 1. Tasks are carried out independently and with full responsibility 2. The assessment of this task is 20% of 100% of the entire CLO
DAFTAR RUJUKAN
<ul style="list-style-type: none"> 1. Basuki, Slamet. 2006. <i>Ilmu Ukur Tanah</i>. Yogyakarta: Universitas Gadjah Mada Press 2. Heinz, Frick, 1989, <i>Ilmu dan alat ukur tanah</i>, Yogyakarta : Kanisius. 20th.2006 3. Suyono Sasrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita. 4. Petunjuk praktikum Ukur Tanah Pendidikan Geografi.2018.

Plan Task 6

	UNIVERSITAS NEGERI SURABAYA FACULTY OF SOCIAL SCIENCE AND LAW GEOGRAPHY EDUCATION DEPARTMENT				
STUDENT TASK PLAN					
COURSE	Land Surveying				
CODE	8720202076	sks	2	SEMESTER	5
Lecturer	<ul style="list-style-type: none"> 1. Dr. Muzayanah, MT. 2. Dr. Eko Budianto, M.Si. 				
TASK FORM	TASK WORKING TIME				
Structured Tasks	Week 15				
TASK TITLE					
Area of poligon					
LLO = <i>Lesson Learning Outcomes</i>					
LLO-7: Able to analyze the area of the mapping					
TASK DESCRIPTION					
This assignment aims to enable students to analyze the area of the mapping area					
TASK WORKING METHODS					
Analyzing area with geospatial technology					
OUTPUT					
<ul style="list-style-type: none"> a. Cultivated Object: <ul style="list-style-type: none"> - Analyzing area b. Output: Report 					
INDICATORS, CRITERIA AND WEIGHT OF ASSESSMENT					
<ul style="list-style-type: none"> 1. Performance Results: Results of Analysis and description (weight 60%) <ul style="list-style-type: none"> a. Accuracy in analyzing area (60%) 2. Active in group work (weight 10%) 					

<ul style="list-style-type: none"> a. Active 10% b. Less active 5% c. Inactive 0% <p>3. Punctuality in submitting assignments (20% weight)</p> <ul style="list-style-type: none"> a. On time (60 minutes) 20% b. Late less than 15 minutes 5% c. More than 15 minutes late 0% <p>4. Values between 0 to 100</p>	
IMPLEMENTATION SCHEDULE	
Weeks 15 on the implementation of the Land Surveying tasks	
ETC	
<ul style="list-style-type: none"> 1. Tasks are carried out independently and with full responsibility 2. The assessment of this task is 5% of 100% of the entire CLO 	
DAFTAR RUJUKAN	
<ul style="list-style-type: none"> 1. Basuki, Slamet. 2006. Ilmu Ukur Tanah. Yogyakarta: Universitas Gadjah Mada Press 2. Heinz, Frick, 1989, Ilmu dan alat ukur tanah, Yogyakarta : Kanisius. 20th.2006 3. Suyono Sastrodarsono, Masayosi Takasahi, 1997, Pengukuran topografi dan teknik pemetaan. Jakarta: Pradnya Paramita. 4. Petunjuk praktikum Ukur Tanah Pendidikan Geografi. 2018 	