



**INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FACULTY OF CIVIL, PLANNING AND GEO ENGINEERING
DEPARTMENT OF GEOMATICS ENGINEERING
UNDERGRADUATE PROGRAM**

Document Code

SEMESTER LEARNING PLAN (SLP)

COURSE NAME		CODE	COURSE GROUP	CREDITS (SKS)		SEMESTER	Date of Preparation
Mine Survey		CM234955	Surveying and Cadastral	T=2	P=1	Elective Course	-
AUTHORIZATION		SLP Developer		Course Group Coordinator		Head of Study Program	
		Akbar Kurniawan, S.T., M.T.		Yanto Budisusanto, ST, M.Eng		D Putra Maulida, ST, MT, Ph.D	
Learning Outcomes (LO)	Expected Learning Outcomes (ELO) that Imposed in the Course						
	ELO-6	Able to identify, formulate, analyze and solve problems in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.					
	ELO-7	Able to perform spatial data acquisition using modern measurement methods, geospatial data processing, using industry standard software, and making standard designs and analyzes in the fields of geodesy, surveying, hydrography, remote sensing, photogrammetry, and cadastral.					
	ELO-9	Able to plan, perform and evaluate the process of surveying and mapping activities using the latest technology in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.					
	Course Learning Outcomes (CLO)						
	CLO-1	students able to explain geomatics science into exploration, exploitation and recovery in mine activities					
	CLO-2	students able to explain survey and mapping methods in exploration, exploitation, and recovery activities					
	CLO-3	students able to understand safety regulation					

		<table><tr><td colspan="4">Matrix ELO – CLO</td></tr><tr><td>CPMK</td><td>ELO-6</td><td>ELO-7</td><td>ELO-9</td></tr><tr><td>CLO-1</td><td>v</td><td>v</td><td>v</td></tr><tr><td>CLO-2</td><td>v</td><td>v</td><td>v</td></tr><tr><td>CLO-3</td><td></td><td></td><td>v</td></tr></table>						Matrix ELO – CLO				CPMK	ELO-6	ELO-7	ELO-9	CLO-1	v	v	v	CLO-2	v	v	v	CLO-3			v
Matrix ELO – CLO																											
CPMK	ELO-6	ELO-7	ELO-9																								
CLO-1	v	v	v																								
CLO-2	v	v	v																								
CLO-3			v																								
Course Description		This course aims to introduce mapping concepts within the context of mining, including exploration, exploitation, and reclamation activities in mining areas. The course will cover various survey and mapping methods used in mining operations, as well as spatial data processing techniques to support decision-making processes in the field. Students will learn about the use of the latest technologies in terrestrial surveys, hydrographic surveys, photogrammetry, remote sensing, and geographic information systems (GIS). The learning process is expected to provide an in-depth understanding of the application of geomatics in the mining industry and strengthen students' skills in analyzing spatial data while emphasizing the importance of workplace safety in mining operations.																									
Course Materials		1.																									
References		Main:																									
		1.																									
		Additional :																									
		1.																									
Lecturer		1. Akbar Kurniawan, S.T., M.T.																									
Prerequisite																											
Class/ Week	Lesson Learning Outcome (Sub-CLO)	Evaluation		Forms of Learning, Learning methods,Student Assignments/Task, [Estimated Time]		Learning Materials [References]	Weight (%)																				
		Indicators	Criteria and Form	Offline	Online																						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																				
1	Exploration, eksplotation, and recovery activities		1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 50’] 2. Discussion [1 x 50’]			20																				

2	Terrestrial survey activities on mine survey	1.	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 50'] 2. Discussion [1 x 50'] 3. Task [1 x 50']			10
3-4	Spatial information analysis from terrestrial survey		1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 50'] 2. Discussion [1 x 50']			10
5-7	Hydrographic survey activities on mine survey		1. Completeness of the material 2. Depth of explanation and effectiveness of communication	3. Lecture [2 x 50'] 4. Discussion, Task [1 x 50'] Response/Exercise [1 x 50']			10
8	Midterm Evaluation / Midterm Exam						50
9	Photogrammetry on mine survey	1.	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 50'] 2. Discussion, Task [1 x 50'] 3. Response [1 x 50']			5
10	Photogrammetry on mine survey	1.	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 50'] 2. Discussion, Task [1 x 50'] 3. Response [1 x 50']			5
11	Remote sensing usage on mine survey	1.	1. Completeness of the material	1. Lecture [2 x 50'] 2. Discussion, Task [1 x 50']			5

			2. Depth of explanation and effectiveness of communication	3. Response/exercise [1 x 50']			
12	Digital surface model	1.	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 50'] 2. Discussion, Task [1 x 50'] 3. Response/exercise [1 x 50']			5
13	Spatial analysis using GIS software	1.	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 50'] 2. Discussion, Task [1 x 50']			10
14	Spatial data conversion		1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 50'] 2. Discussion, Task [1 x 50']			10
15	Safety Regulations		1. Completeness of the material 2. Depth of explanation and effectiveness of	1. Lecture [1 x 50'] 2. Discussion, Task [1 x 50']			10

			communicatio n				
16	Final Semester Evaluation / Final Semester Examination						100