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

SEMESTER LEARNING PLAN (SLP)

COURSE NAME	CODE	COURSE GROUP	CREDITS		SEMESTER	COMPILATION DATE
Cartography	CM234315	Geoinformatics	T=2	P=1	1	-

AUTHORIZATION	SLP DEVELOPER	COURSE GROUP COORDINATOR	HEAD OF UNDERGRADUATE PROGRAM
	Agung Budi Cahyono, ST, M.Sc, DEA	Agung Budi Cahyono, ST, M.Sc, DEA	Putra Maulida, ST, MT, Ph.D

Learning Outcome (LO)		
	Expected Learning Outcomes (ELO) that Imposed in the Course	
	ELO-2	Able to study and utilize science and technology in order to apply it to the areas of expertise in Geodesy and Surveying, Hydrography, Photogrammetry, and Remote Sensing, as well as Geospatial and Land Information, and able to make appropriate decisions from the results of their own work or group work in the form of a final project report or other forms of learning activities whose outcomes are equivalent to the final project through logical, critical, systematic and innovative thinking.
	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.
	Course Learning Outcomes (CLO)	

<table>
<tr><td></td><td>CLO-1</td><td>Able to apply the basic principles of cartography by recognizing and understanding the mapping process and how to complete the steps of mapping activities through the basic elements of mapping, and being able to organize data into a map.</td></tr>
<tr><td></td><td>CLO-2</td><td>Able to compile spatial data into a map digitally, analyze and provide an assessment of the presentation of information well and in accordance with cartographic rules.</td></tr>
<tr><td></td><td>CLO-3</td><td>Able to present (visualize) and print maps in accordance with mapping techniques and methods that comply with correct cartographic rules.</td></tr>
<tr><td></td><td></td><td>Matrix ELO – CLO
<table>
<tr><td>CLO</td><td>ELO-2</td><td>ELO-6</td><td>ELO-7</td></tr>
<tr><td>CLO-1</td><td>V</td><td>V</td><td></td></tr>
<tr><td>CLO-2</td><td></td><td>V</td><td>V</td></tr>
<tr><td>CLO-3</td><td></td><td>V</td><td>V</td></tr>
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<tr><td>Course Description</td><td colspan="2">In this course, students will learn about the basic concepts of cartography up to the era of map digitization. The definition of map in question is the meaning of maps, the classification of maps according to their nature, type, and type. After knowing the meaning of a map, the procedure for making a map is taught, namely the mapping process which consists of: data collection, data processing, and data presentation. The understanding of scale is instilled in making maps so that the appearance of the map is good in the sense of being thorough, complete, and attractive, then the design and layout of the map is studied. Next, students will learn how to make maps using computer technology. Basic theory regarding cartographic elements such as generalization of the elements that will be presented along with the map scale; selecting symbols and colors for an element of the earth's surface in accordance with the geospatial information to be presented; Map layout, placement of map contents and text, such as choosing the type and size of letters, will be provided so that students know how to create features and design maps using digital technology. The ability to create/convert analog maps to digital and process data in both vector and raster form will be able to process geospatial data, as well as be able to apply the use of digital mapping applications.</td></tr>
<tr><td>Course Materials</td><td colspan="2">1. Cartographic Concepts
2. Map classification
3. Simple map making procedure
4. Use of scale and its calculation
5. Plotting coordinates from available data
6. Simple map layout design
7. Making contour from available data
8. Map making from a set of available data (secondary data)</td></tr>
</table>

References	**Main References :** 1. Aziz, Lukman dan Ridwan. 1979. Peta Tematik. Jurusan Teknik Geodesi FTSP ITB. Bandung 2. Aziz, Lukman dan Ridwan. 1979. Peta Tematik. Jurusan Teknik Geodesi FTSP ITB. Bandung 3. Yuwono, 2009. Kartografi. Prodi teknik Geomatika ITS. 2009. Surabaya. **Additional References :** 1. Villanueva, K.J. 1984. Kartografi. Jurusan Teknik Geodesi FTSP ITB. Bandung . 2. Wolf, Paul, R. 1974 Elementary of Photogrametry 3. Kraak, MJ., Omerling, J. 1996. Cartography Petzation of spatial data Prentice Hall. London
Lecturer	Ir. Yuwono, MS Agung Budi Cahyono, ST, M.Sc, DEA Cherie Bhekti Pribadi, ST, MT Nurwatik, ST, MSc
Prerequisite	No Prerequisite

Class/ Week	**Lesson Learning Outcome (Sub-CLO)**	**Evaluation**		**Forms of Learning, Learning methods, Student Assignments/Task, [Estimated time]**		**Learning Materials [References]**	**Weight (%)**
		Indicator	**Criteria**	**Offline**	**Online**		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1 - 2	Able to explain the concept of cartography, including the meaning of the map, the position of a place and the purpose of cartography.		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Explanation of Syllabus and Class Rules	10%
				Discussion, Student-centered learning [2 x 50']		Lectures, Introduction to Cartography	

				Practice, Problem-based learning [2 x 50']		Definition of Cartography	
				Task, []		Definition of position	
3 - 4	Able to distinguish various type of maps which circulate in the community		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Definition of map	20%
				Discussion, Student-centered learning [2 x 50']		Map classification	
				Practice, Problem-based learning [2 x 50']			
				Task, Task-1: Search various maps []			
5 - 6	Able to explain map making procedures in a simple way		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Map making procedure:	10%
				Discussion, Student-centered learning [2 x 50']		Field orientation	
				Practice, Problem-based learning [2 x 50']		Data retrieval	
						Data processing	
						Presentation of data	

7	Able to apply the use of scale and its calculations		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [1 x 50']		Scale on the map	10%
				Discussion, Student-centered learning [1 x 50']		Several things related to scale on the map	
				Practice, Problem-based learning [1 x 50']			
8	Mid-Semester Evaluation						**50**
9 - 10	Able to plot coordinates from available data		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Definition of coordinate systems	20%
				Discussion, Student-centered learning [2 x 50']		Several coordinate systems in maps	
				Practice, Problem-based learning [2 x 50']		Calculation of coordinate	
				Task, Task-2 : Plotting		Determination of paper size related to map scale	
11 - 12	Able to design a simple map layout		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Create a layout design on the map	10%
				Discussion, Student-centered learning [2 x 50']		Paper size symmetry	

				Practice, Problem-based learning [2 x 50']		Legend and symbol location	
						Grid Making	
13 - 14	Able to make contours from available data		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [2 x 50']		Complete the map with contours	10%
				Discussion, Student-centered learning [2 x 50']		Contour making	
				Practice, Problem-based learning [2 x 50']			
				Task, Task-3 : Making contour []			
15	Able to make a map from a set of available data (secondary data)		Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	Lecture, Teacher-centered learning [1 x 50']		Making a complete map from secondary data	10%
				Discussion, Student-centered learning [1 x 50']			
				Practice, Problem-based learning [1 x 50']			
				Task, Task-4 : Map Finalization []			
16	**Final Semester Evaluation / Final Semester Examination**						**100**