	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**
Thematic Geospatial Information *) (Enrichment	CM234974	Geospatial	**T=1**	**P=1**	Elective Course	-

AUTHORIZATION	**SLP Developer**	**Course Group Coordinator**	**Head of Study Program**
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Learning Outcomes (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-7	Able to perform spatial data acquisition using modern measurement methods, geospatial data processing, using industry standard software, and making standard designs and analyses in the fields of Geodesy and Surveying, Hydrography, Photogrammetry and Remote Sensing, as well as Geospatial and Land Information.
	ELO-10	Able to work in inter-disciplinary and inter-cultural teams so they can compete at national and international levels.
	Course Learning Outcomes (CLO)	
	CLO-1	Students are able to explain definition of Geospatial Information according to Law of Geospatial Information, and its role which according to one map policy
	CLO-2	Students are able to organize data and represent aspects of basic geospatial information and thematic geospatial information in both sectoral as well as non-sectoral
	CLO-3	Students are able to organize data and represent data sources as well as several aspects of thematic geospatial information for non-sectoral field in national level namely land transportation infrastructure

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<tr><td></td><td>CLO-4</td><td>Students are able to organize data and represent data sources as well as several aspects of thematic geospatial information for non-sectoral field in province level namely mineral resources, rice field, forest area, volcano hazard prone area</td></tr>
<tr><td></td><td>CLO-5</td><td>Students are able to organise and represent Thematic Information Geospatial by using Website Geographic Information System (Web-GIS) and apply towards village potential in socio-economic field</td></tr>
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<tr><td></td><td></td><td>Matrix ELO – CLO
<table>
<tr><td>CPMK</td><td>ELO-2</td><td>ELO-7</td><td>ELO-10</td></tr>
<tr><td>CLO-1</td><td>V</td><td>V</td><td></td></tr>
<tr><td>CLO-2</td><td>V</td><td>V</td><td></td></tr>
<tr><td>CLO-3</td><td>V</td><td></td><td>V</td></tr>
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<tr><td>CLO-5</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 one type of Geospatial Information (GI), namely Thematic Geospatial Information. Laws and regulations relating to Geospatial Information with the relevance of One Map Policy will be provided as a fundamental concept in establishment of Geospatial Information. Assignments are given in the form of working groups to arrange a Thematic GI both in the sectoral and non-sectoral fields, to maintain a better understanding for students about the establishment of Thematic GI. Problems existing in the community, especially local governments, are used as a case study. Herein, students can think critically and apply Thematic GI to solve those problems such as transportation infrastructure, agriculture and forestry, mineral resources, and potential revenue (district or province).</td></tr>
<tr><td>Course Materials</td><td colspan="2">1. The concept of Geospatial Information (GI) includes Basic GI and Thematic GI referring to GI Law.
2. The concept of GI especially Thematic GI concerning one map policy
3. Data and constituent elements of the Basic and Thematic GI both for sectoral and non-sectoral fields
4. Establishment of thematic GI in comprehensive sectors such as transportation infrastructure, agriculture and forestry, mineral resources, and regional potential.</td></tr>
<tr><td>References</td><td colspan="2">Main:
1. Dent B. Cartography: Thematic Map Design. McGraw Hill, 5th Edition; 1999. ISBN: 0697384950.
2. Slocum TA, McMaster RB, Kessler FC, and Howard HH. Thematic Cartography and Geovisualization, 3rd
3. President of the Republic of Indonesia, Law No. 4 of 2011 concerning Geospatial Information
4. ESRI, 2009, GIS for Building and Managing Infrastructure
Additional :
1. Holdstock D.A., 2019, Smart Geospatial Practices and Applications in Local Government: An Altogether Different
2. Wolf P., DeWitt B., and Wilkinson B., 2014, Elements of Photogrammetry with Application in GIS, Mc Graw Hill</td></tr>
<tr><td>Lecturer</td><td colspan="2">Cherie Bhekti Pribadi, S.T., M.T.</td></tr>
</table>

Prerequisite	Geografic Information System						
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	Able to explain the definition and concept of IGD and IGT	Accuracy in explaining the definition and concept of IGD and IGT	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45']		Concept and definiton of IGD and IGT, Relationship between IG with one map policy	10
2	Able to explain the type of data	Accuracy in explaining the type of data	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45'] 3. Task [1 x 45']		Type of data related to IGD and IGT	10
3	Able to explain the type of data and thematic aspect	Accuracy in explaining the type of data and thematic aspect	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 45'] 2. Discussion [1 x 45']		Type of data and thematic aspect in making geospatial information of national road networks, toll-road, province and regency	10
4 – 5	Able to understand about IGT for mineral resource exploration	Accuracy in understanding about IGT for mineral resource exploration	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [2 x 45'] 2. Discussion, Task [1 x 45'] 3. Response [1 x 45']		Organizing data and its attributes which is needed by IGT for mineral resource exploration	10
6 – 7	Able to understand about IGT for agriculture	Accuracy in understanding	1. Completeness of the material	1. Lecture [2 x 45'] 2. Discussion [1 x 45']		Organizing data and its attributes which is	10

		about IGT for agriculture	2. Depth of explanation and effectiveness of communication	3. Response [1 x 45']		needed by IGT for agriculture	
8	**Midterm Evaluation / Midterm Exam**						**50**
9	Able to analysis of land cover change	Accuracy in analyzing of land cover change	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45']		Analysis of land cover change by using transition matrices	5
10	Able to analysis the eforestation and illegal logging	Accuracy in analyzing the eforestation and illegal logging	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion, Task [1 x 45']]		Analysis of deforestation and illegal logging by using geostatistical analysis such as kriging	5
11	Able to identify evacuation route by using network analysi	Accuracy in identifying evacuation route by using network analysi	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45']		Analysis which is needed to identify evacuation route by using network analysis and weighting such as simple additive weighting for identificating an evacuation location	5
12	Able to identify prone area	Accuracy in identifying prone area	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45']		Analysis that is needed to identify prone area by using proximity analysis and 3-dimension analysis	5

13	Able to make a Web GIS	Accuracy in making a Web GIS	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Discussion [1 x 45']		Web GIS	10
14	Able to explain the type of data and thematic aspect	Accuracy in explaining the type of data and thematic aspect	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Task [1 x 45']		Type of data and thematic aspect about village potency in socio-economic by using WebGIS	10
15	Able to identify the relationship between social with economic potential	Accuracy in identifying the relationship between social with economic potential	1. Completeness of the material 2. Depth of explanation and effectiveness of communication	1. Lecture [1 x 45'] 2. Task [1 x 45']		Analysis for identifying relationship between social with economic potential by using land use analysis	10
16	**Final Semester Evaluation / Final Semester Examination**						**100**