



SEMESTER LEARNING PLAN
DEPARTMENT OF GEOMATICS ENGINEERING
FACULTY OF CIVIL, PLANNING, and GEO ENGINEERING

PROGRAM	UNDERGRADUATE		
COURSE NAME	Digital Cartography	CODE	RM184309
SEMESTER	III (three)	CREDITS	3 (three)
LECTURERS	Agung Budi Cahyono (Coord)		
	Akbar Kurniawan, Udiana W. Deviantari, Cherri Bhekti Pribadi		
COURSE MATERIALS	1	The concept of cartography as a technique and method in digital mapping	
	2	Digital data acquisition and conversion	
	3	Representation of symbols, labels and attributes in Cartography	
	4	Map design technology and digital map production	
	5	Application of KUGI in design and digital cartography	
	6	Development of web / internet-based geospasial data visualization technology	
EXPECTED LEARNING OUTCOMES THAT IMPOSED IN THE COURSE	C	Able to identify, formulate, analyze and solve problems in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.	
	D	Able to perform spatial data acquisition using modern measurement methods, geospasial data processing, using industry standard software, and making standard designs and analyzes in the fields of geodesy, surveying, hydrography, remote sensing, photogrammetry, and cadastral.	
	E	Able to apply information & communication technology and the latest technological developments in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, geographic information systems, and cadastral.	
	F	Able to compile scientific reports and provide solutions based on leadership, creativity and communication skills as well as being responsible for the work done.	
COURSE LEARNING OUTCOMES	1	Students have knowledge of cartography which is applied to digital spatial data	
	2	Students have knowledge of data processing from acquisition to visualization using digital devices	
	3	Students have the experience to be able to apply the concept of mapping and presenting it digitally	
	4	Students have the ability to manage mapping based on the principle of cartography in a hierarchical manner with harmonization and implementation of the development of digital cartography technology	
	5	Students have knowledge and can follow and apply geospasial information through internet / web-based digital mapping technology.	
ABILITY CATEGORIES	<i>Cognitive Prosecess</i>	<i>Analyse</i>	
	<i>Knowledge Domain</i>	<i>Procedural</i>	
	<i>Psychomotor</i>	<i>Conscious control</i>	
	<i>Affective</i>	<i>Change of attitude</i>	

Class	Lesson learning outcome	Criteria dan Assessment Indicator	Weight	Learning Materials	Learning Experience	Learning Methods	Estimated Time
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to explain the science of cartography and its relation to digital technology.	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	5	<ul style="list-style-type: none"> General explanation and method of studying Cartography Review Cartography and applications Cartography in mapping 	Lecture	Teacher-centered	1 x 50'
					Discussion	Student-centered	1 x 50'
					Exercise	Problem-based learning	1 x 50'
2, 3	Students are able to decipher the concept of Cartography in relation to geospasial data as a technique and method in mapping.	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> Understanding of geospasial data Compare with analog cartography Stages of activities in Digital Cartography 	Lecture	Teacher-centered	1 x 50'
					Discussion	Student-centered	1 x 50'
					Exercise	Problem-based learning	1 x 50'
4, 5	Students are able to explain the use of spatial data (raster and vector) and their use in the field of cartography	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> Understanding raster and vector data Data sources from terrestrial, photogrammetric methods and remote sensing 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
6	Students are able to apply Thematic map concepts and present them digitally	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	20	<ul style="list-style-type: none"> Definition of Thematic maps The concept of mapping qualitative and quantitative data Digital thematic map application 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'

7	Students are able to explain analog to digital data conversion methods.	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> • The concept of data conversion in geospatial data • Types of digitization: on screen or using a digitizer • R2V / V2R concept • Definition of DPI resolution 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
8	Mid-Semester Evaluation						
9, 10	Students are able to understand and explain Cartography automation	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	15	<ul style="list-style-type: none"> • Understanding Cartography technology • Technology functions and facilities in the field of mapping • Basic elements of Cartography (digital): generalization, layout, coloring 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
11, 12	Students are able to design digital thematic maps in 2D and 3D	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> • Map Design Principles • Hierarchy with Harmonization • Implementation and development of 2D and 3D Cartography technology 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
13, 14	Students are able to apply the Digital Cartography application for drawing and calculating contours and profiles	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> • Data acquisition • Drawing process • Volume calculation • Plotting 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
15	Students are able to visualize geospatial information in the form of maps via the internet / website	Completeness of material, depth of explanation, effectiveness of communication, accuracy of attitude	10	<ul style="list-style-type: none"> • Definition of Cartographic Visualization • Concepts, definitions of Spatial WebSite 	Lecture	Teacher-centered learning	1 x 50'
					Discussion	Student-centered learning	1 x 50'
					Exercise	Problem-based learning	1 x 50'
16	Final Semester Evaluation						
TOTAL			100				