



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

PROGRAM	UNDERGRADUATE		
COURSE NAME	Hidrographic Survey	CODE	RM184516
SEMESTER	V (five)	CREDITS	3 (three)
LECTURERS	Danar Guruh Pratomo, (Coord)		
	Khomsin, Cherie Bhekti Pribadi, Cherie Bhekti Pribadi		
COURSE MATERIALS	1	Definition, theory and application of hydrographic surveys	
	2	Hydrographic Survey Planning	
	3	Vertical datum and datum chartDetermination of horizontal position at sea	
	4	Determination of horizontal position at sea	
	5	Ocean depth measurement methods (acoustic and non acoustic)Survey and Mapping Work Organization	
	6	Hydrographic maps and bathymetry maps	
EXPECTED LEARNING OUTCOMES THAT IMPOSED IN THE COURSE	B	Able to design survey and mapping activities using the latest technology in the fields of geodesy, surveying, hydrographic, remote sensing, photogrammetry, and cadastral.	
	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, 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.	
	F	Being 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 know the concepts, theories and applications of hydrographic surveys	
	2	Students are able to plan hydrographic surveysStudents are able to process tidal data to determine datum chartsStudents are able to take horizontal position	
	3	Students are able to process tidal data to determine datum charts	
	4	Students are able to perform horizontal position measurements at sea	
	5	Students are able to measure survey depth with a variety of methods (mechanical, acoustic, non-acoustic)	
	6	Students are able to draw hydrographic maps	
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 - 2	Students are able to explain the concepts, theories and definitions of hydrographic surveys. In addition, students must also be able to explain the application of hydrographic surveys in the field of geomatics and non-geomatics	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	5	Hydrographic definition; Hydrographic theory; Hydrographic survey concept; Hydrographic application and hydrographic survey	Lecture Presentation Discussion	Teacher center learning Students center learning	K : 4 x 50' R : 2x 50' M : 6 x 50'

3	Students are able to distinguish between hydrographic maps and topographic maps	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	5	Hydrographic Map; Topographic Map	Lecture Presentation Discussion	Teacher center learning Students center learning	K : 2 x 50' R : 1 x 50' M : 3 x 50'
4 - 5	Students are able to understand the determination of horizontal position at sea	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	LOP; Traverse; Intersection and resection; GNSS RTK DGNS	Lecture Presentation Discussion	Teacher center learning Students center learning Praktik	K : 4 x 50' P : 6 x 50' M : 6 x 50'
6 - 7	Students are able to understand the concepts of tides and datum charts	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Tidal Theory; Characteristics of the tides; Doodson number; Datum Chart	Lecture Presentation Discussion	Teacher center learning Students center learning Problem based learning	K : 4 x 50' R : 4 x 50' M : 6 x 50'
8	Mid Semester Evaluation						
9 - 10	Students are able to understand depth determination using non acoustic methods	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Lead Line; Sounding Pole; Tachimetry; GPS RTK; Airborne Lidar; Remote Sensing	Lecture Presentation Discussion	Teacher center learning Students center learning Problem based learning	K : 4 x 50' R : 4 x 50' M : 6 x 50'
11 - 12	Students are able to understand depth determination using the acoustic method (SBES)	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Barcheck; SBES; Acoustic Waves; Low and High Frequency; Narrow and wide beam	Lecture Presentation Discussion	Teacher center learning Students center learning Problem based learning	K : 4 x 50' R : 4 x 50' M : 6 x 50'
13	Students are able to plan hydrographic surveys	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Hydrographic Survey Management; Hydrographic Survey planning	Lecture Presentation Discussion	Teacher center learning Students center learning Problem based learning	K : 2 x 50' R : 1 x 50' M : 3 x 50'
14 - 15	Students are able to calculate hydrographic survey data and make hydrographic maps	Material completeness, depth of explanation, effectiveness of communication, accuracy of attitude	15	Tidal Correction; Barcheck Correction; Datum Chart Correction; Correction Draft Transducer; Bathymetry Countiur; Sea Map	Lecture Presentation Discussion	Teacher center learning Students center learning Problem based learning	K : 4 x 50' R : 2 x 50' M : 6 x 50'
16	Final Semeseter Evaluation						