



UNIVERSITAS PENDIDIKAN INDONESIA

SEMESTER LEARNING PLAN (RPS)

COURSE INFORMATION

Course Name	Course Code	Credits	Workload	Course Group	Semester	Prerequisite Course	Date of Issue
APPLIED HYDROGRAPHIC SURVEY	SA528	2	90		6	Hydrographic Survey	2025-09-09 11:26:56

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COURSE DESCRIPTION AND LEARNING OUTCOMES

Course Description	The Applied Hydrographic Survey course is an advanced course derived from the Hydrographic Survey course, with an emphasis on the applied aspects of the concepts that have previously been studied. In addition to the applied aspects of hydrographic surveying, the study area is directed toward coastal regions as locations where physical parameters originating from both the sea and the land interact. Common phenomena frequently encountered in coastal areas include shoreline changes caused by abrasion, which refers to the landward shift of the shoreline, and sedimentation, which refers to the seaward shift of the shoreline. Analysis is conducted to identify the influence of these events on coastal morphological conditions and human activities in coastal areas..		
Program Learning Outcome Assigned in the Course	1	To have faith in God Almighty and to demonstrate religious attitudes and behavior in daily life.	
	2	To work collaboratively and possess social sensitivity as well as concern for society and the environment	
	3	To internalize academic values, norms, and ethics.	
	4	To master the fundamental concepts of regional surveying and mapping, as well as the fundamentals and applications of mathematics and statistics in the field of surveying and mapping.	
	5	To master the theoretical concepts of Remote Sensing, including both active and passive remote sensing systems, the concepts of visual and digital image interpretation, and the application of remote sensing for geosphere information.	
	6	To master the theoretical concepts of Geographic Information Systems, including spatial database concepts and spatial modeling concepts	
	7	To be able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology while considering and applying humanistic values relevant to their field of expertise	
	8	To demonstrate independent, high-quality, and measurable performance; to be able to assess the implications of the development or implementation of science and technology while considering and applying humanistic values in accordance with their expertise based on scientific principles, procedures, and ethics in order to produce solutions, ideas, designs, or artistic critiques.	
	9	To make appropriate decisions in the context of problem solving within their field of expertise based on the analysis of information and data.	
	10	To be able to plan regional surveying and mapping activities; to acquire, validate, process, and analyze surveying and mapping data; and to visualize geosphere information based on science and technology.	
Course Learning Outcome (CPMK)	1	To understand and describe the conditions of physical dynamics in coastal areas	
	2	To be able to inventory and understand the correlation of the utilization of spatial technologies that can be applied in coastal areas.	
	3	To understand and explain the causes of abrasion and sedimentation phenomena as impacts of coastal area dynamics, along with their consequences for human activities in coastal areas in general	
	4	To apply spatial technologies to analyze the impacts of coastal area dynamics on ports	
	5	To understand laws and regulations related to activities and the management of coastal areas	
Sub-CPMK	1	CPMK - 1	Students are able to understand the conditions of coastal areas by utilizing both spatial and non-spatial information

	2	CPMK - 1	Students are able to understand the dynamics of coastal areas caused by physical phenomena originating from both land and sea.
	3	CPMK - 2	Students are able to understand and describe shoreline delineation methods as the boundary between land and sea in coastal areas
	4	CPMK - 2	Students are able to conduct observation, analysis, and prediction of tidal data
	5	CPMK - 2	Students are able to conduct observation and analysis of current and wave data that influence coastal areas
	6	CPMK - 3	Students are able to identify the causes and impacts of abrasion and sedimentation events in coastal areas through the analysis of sediment transport
	7	CPMK - 4	Students are able to understand the concept of a port, including its definition, specifications, types of vessels, facilities, as well as the Port Working Area (DLKR) and the Port Interest Area (DLKP)
	8	CPMK - 5	Students are able to understand regulations related to activities in coastal areas, particularly those related to spatial planning
	9	CPMK - 5	Students are able to understand current issues related to the management of coastal areas and conduct correlation analysis with the applicable regulations
Course Materials	1	Introduction to coastal area surveying	
	2	Coastal area dynamics	
	3	Shoreline mapping	
	4	Tidal data processing	
	5	Current and wave data processing	
	6	Sediment transport analysis	
	7	Port planning	
	8	Integration of coastal area planning	
Learning outcomes demonstrated at the end of the course *)	The expected outcome of the course is a coastal area map that includes a base map, current conditions, and the potential for abrasion and sedimentation		
Learning Strategy		Case Method	
	✓	Team based Project	
		Other	
Learning Stages	The learning process is conducted through face-to-face sessions, assignments, field practicum, and presentation of activities at the end of the course..		

References	1	Poerbandono, & Djunarsjah, E. (2005). Hydrographic Survey. In (R. Herlina, Ed.) (First Edition). Bandung, Indonesia: PT Refika Aditama.
	2	De Jong, C. D., G, L., S, S., & I. A., E. (2010). Hydrography. Delft University Press.
	3	IHO. (2020). A Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982 (TALOS) (6th ed., Issue 377). International Hydrographic Organization.
	4	Stewart, R. H. (2008). Introduction to Physical Oceanography. Department of Oceanography, Texas A & M University
	5	Kramadibrata, Soedjono. (2002). Port Planning. Bandung: ITB Press.
	6	Triatmodjo, Bambang. (2009). Port Planning. Yogyakarta: Beta Offset Yogyakarta.

LEARNING PLAN

Week -	Sub-CPMK	Learning Indicator	Course Material	Assessment		Learning Method		Duration (hours)	Reference	Access Time
				Assessment Methode (test/non-test)	Assessment Weighting (%)	Synchronous	Asynchronous			
1	Students are able to understand coastal area conditions by utilizing both spatial and non-spatial information.	Students are able to understand the general overview of the course material	Introduction to coastal area survey	Other	5	Face-to-face	-	2	1	03-02-2025 08:40
2	Students are able to understand coastal area conditions by utilizing both spatial and non-spatial information	Students are able to understand the pattern of interaction between land and sea and the impact of coastal dynamics on activities along the coast	Coastal area dynamics	Participatory	5	Face-to-face	-	2	1	10-02-2025 09:49
3	Students are able to understand and describe shoreline delineation methods as the boundary between land and sea in coastal areas	Students are able to understand the types of coastal morphology and delineation methods for each type of coastal morphology	Shoreline mapping	Essay	5	Face-to-face	Independent assignment	2	1,2,3	17-02-2025 09:52
4	Students are able to conduct observation, analysis, and prediction of tidal data	Students are able to understand and implement the Admiralty method.	Tidal data processing	Essay	5	Face-to-face	Independent assignment	2	1,3	24-02-2025 09:55
5	Students are able to conduct observation, analysis, and prediction of tidal data	Students are able to understand and implement harmonic analysis using the least squares method	Tidal data processing.	Essay	5	Face-to-face	Independent assignment	2	1,2,3	03-03-2025 09:56
6	Students are able to conduct observation and analysis of current and wave data affecting coastal areas	Students are able to understand current movement and its impact on coastal areas	Current and wave data processing	Essay	5	Face-to-face	Independent assignment	2	1,4	10-03-2025 09:58

Week -	Sub-CPMK	Learning Indicator	Course Material	Assessment		Learning Method		Duration (hours)	Reference	Access Time
				Assessment Methode (test/non-test)	Assessment Weighting (%)	Synchronous	Asynchronous			
7	Students are able to conduct observation and analysis of ocean current and wave data that influence coastal areas	Students are able to understand wave movement and its impact on coastal areas	Processing of current and wave data	Essay	5	Face-to-face	Independent assignment	2	2,3	17-03-2025 09:59
8	Students are able to understand and describe the method of shoreline delineation as the boundary between land and sea in coastal areas	Students are able to understand shoreline delineation methods	Shoreline mapping	Essay	15	Face-to-face	-	2	1,3	24-03-2025 09:59
9	Students are able to identify the causes and impacts of coastal abrasion and sedimentation in coastal areas through analysis of sediment movement	Students are able to understand methods of marine sediment data acquisition, measurement of marine sediments, and the preparation of sediment rate maps	Sediment transport analysis	Essay	5	Face-to-face	-	2	1,3	31-03-2025 08:40
10	Students are able to identify the causes and impacts of coastal abrasion and sedimentation in coastal areas through analysis of sediment movement	Students are able to understand and implement planning tools for sediment transport data acquisition	Sediment transport analysis	Essay	5	Face-to-face	Independent assignment	2	1,2,3	07-04-2025 08:40
11	Students are able to understand the concept of a port, starting from the definition, specifications, types of vessels, facilities, and the Port Work Environmental Area (DLKR) and the Port Interest Environmental Area (DLKP)	Students are able to understand the definition of a port and the role of ports in activities within coastal areas	Port planning	Essay	5	Face-to-face	-	2	5,6	14-04-2025 08:40

Week -	Sub-CPMK	Learning Indicator	Course Material	Assessment		Learning Method		Duration (hours)	Reference	Access Time
				Assessment Method (test/non-test)	Assessment Weighting (%)	Synchronous	Asynchronous			
12	Students are able to understand the concept of a port, starting from the definition, specifications, types of vessels, facilities, and the Work Environmental Area (DLKR) and the Port Interest Environmental Area (DLKP).	Students are able to understand port specifications, types of vessels, and the facilities that must exist at a port.	Port planning	Essay	5	Face-to-face	Independent assignment	2	5,6	21-04-2025 07:40
13	Students are able to understand the concept of a port, starting from the definition, specifications, types of vessels, facilities, and the Work Environmental Area (DLKR) and the Port Interest Environmental Area (DLKP)	Students are able to understand the boundaries of the Port Work Environmental Area (DLKR) and the Port Interest Environmental Area (DLKP)	Port planning	Essay	5	Face-to-face	Independent assignment	2	5,6	25-04-2025 08:40
14	Students are able to understand regulations related to activities in coastal areas, especially those related to regional planning	Students are able to understand the concept of the Regional Spatial Plan (RDTR) of regencies/cities and the Zoning Plan for Coastal Areas and Small Islands (RZWP3K) of provinces	Integration of coastal area planning	Essay	5	Face-to-face	Independent assignment	2	5,6	05-05-2025 08:40
15	Students are able to understand current issues related to coastal area management and conduct correlation analysis with applicable regulations	Students are able to identify current issues in coastal areas and conduct correlations with existing regulations	Integration of coastal area planning	Essay	5	Face-to-face	Independent assignment	2	5,6	12-05-2025 08:40
16	Final Examination				15					19-05-2025 08:40

STUDENT LEARNING TIME (WORKLOAD)

LEARNING	ACTIVITIES		SYNCHRONOUS (Face-to-Face / Virtual Meeting)	ASYNCHRONOUS (Structured / Independent)	STUDENT LEARNING PREPARATION	TOTAL STUDENT LEARNING AND INSTRUCTION TIME
	Lectures/Responses/Tutorials		14 × 100 minutes = 1400 minutes	7 × 50 minutes = 350 minutes	16 × 10 minutes = 160 minutes	1910 minutes (31.8 hours)
	Project-based learning		4 × 50 minutes = 200 minutes	7 × 50 minutes = 350 minutes	4 × 10 minutes = 40 minutes	590 minutes (9.8 hours)
	Discussion (case-based learning)		4 × 50 minutes = 200 minutes	6 × 60 minutes = 360 minutes	4 × 10 minutes = 40 minutes	600 minutes (10.0 hours)
	TOTAL					3100 minutes (51.7 hours)
ASSESSMENT		Continuous Assessment				
		Participation During Learning	16 x 50 minutes = 800 minutes	-x-	-x-	800 minutes (13.3 hours)
		Project Completion	10 x 50 minutes = 500 minutes	-x-	-x-	500 minutes (8.3 hours)
		Assignments	10 x 50 minutes = 500 minutes	-x-	-x-	500 minutes (8.3 hours)
		Quizzes	10 x 30 minutes = 300 minutes	-x-	-x-	300 minutes (5.0 hours)
		Formative				100 minutes (1.7 hours)
		Summative				100 minutes (1.7 hours)
	TOTAL					2300 minutes (38.3 hours)
TOTAL WORKLOAD						5400 minutes (90 hours)
TOTAL IDEAL HOURS						90 hours
CREDITS						2
CONFORMITY WITH THE NUMBER OF CREDITS						APPROPRIATE

CPMK ASSESSMENT CRITERIA

No	CPMK	CPL										TAXONOMY	Weight	CPMK ACHIEVEMENT CRITERIA
		CPL-1	CPL-2	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9	CPL-10			
1	Understanding and describing the physical dynamic conditions in coastal areas											10	10	60% of the total students obtain a minimum score of 80 (scale 100)
2	Able to inventory and understand the correlation of spatial technology utilization that can be applied in coastal areas											35	40	60% of the total students obtain a minimum score of 80 (scale 100)
3	Understanding and explaining the causes of abrasion and sedimentation phenomena as impacts of coastal dynamics and their consequences on human activities in coastal areas in general											10	10	60% of the total students obtain a minimum score of 80 (scale 100)
4	Applying spatial technology to analyze the impacts of coastal dynamics on ports											15	15	60% of the total students obtain a minimum score of 80 (scale 100)
5	Understanding laws and regulations related to activities and management of coastal areas											10	10	60% of the total students obtain a minimum score of 80 (scale 100)

COLLABORATIVE ASSIGNMENT DESIGN

ASSIGNMENT TITLE	Evaluation of the Impact of Sediment Transport on Coastal Area Activities at the Coast of Subang Regency
LEARNING METHOD	Team based Project
TIME	
ASSESSMENT WEIGHT	25
SUB-CPMK	Students are able to understand the dynamics of coastal areas caused by physical phenomena originating from both land and sea

ASSIGNMENT DESCRIPTION
Students conduct an identification of problems in the coastal area of Subang Regency by applying the concepts that have been studied in the Hydrographic Survey course in order to solve problems in coastal areas that affect human activities
TASK COMPLETION STEPS
Steps for completing the assignment
1. Students conduct secondary data processing for four parameters, namely tides, currents, sediment transport, and shoreline. The secondary data may include satellite imagery, global model data, or empirical data from stations owned by institutions
2. Students conduct field activity planning
3. Students prepare instrument equipment for data acquisition
a. Current meter for current measurement
b. GNSS for shoreline measurement
c. Sediment trap for sediment transport measurement
d. Tide pole for tidal observation
4. Students conduct field data acquisition
5. Students perform data processing
6. Students compile the report
7. Students present the results of the field activities

DETAILS OF EXPECTED OUTPUTS

The outputs produced include

1. Visualization of field data
2. Integrated coastal area map
3. Field activity report and presentation materials

INDICATORS, CRITERIA, AND ASSESSMENT WEIGHT

Indicators

1. Active student participation in the activities
2. Activity report

Criteria

1. Quality of observational data
2. Accuracy of field data analysis based on concepts

Assessment Weight

1. Results of data acquisition
2. Activity report
3. Presentation

IMPLEMENTATION SCHEDULE

Note: The total number of days in one semester is $16 \times 7 = 112$ days. The implementation schedule can be determined based on the calculation of days

Activity

Implementation Time

OTHERS

REFERENCES

1. Poerbandono, & Djunarsjah, E. (2005). Hydrographic Survey. In (R. Herlina, Ed.) (First Edition). Bandung, Indonesia: PT Refika Aditama.
2. De Jong, C. D., G, L., S, S., & I. A., E. (2010). Hydrography. Delft University Press.
3. IHO. (2020). A Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982 (TALOS) (6th ed., Issue 377). International Hydrographic Organization.
4. Stewart, R.H. (2008) Introduction To Physical Oceanography. Department of Oceanography Texas A & M University.
5. Kramadibrata, Soedjono. (2002). Port Planning. Bandung: ITB Press.
6. Triatmodjo, Bambang. (2009). Port Planning. Yogyakarta: Beta Offset Yogyakarta.