



**BRAWIJAYA UNIVERSITY FACULTY OF ENGINEERING
UNDERGRADUATE URBAN AND REGIONAL PLANNING STUDY PROGRAM**

SEMESTER LEARNING PLAN

SUBJECT	CODE	SUBJECT SCOPE	WEIGHT (credits)	SEMESTER	Date of Preparation
Artificial Intelligence-Based Water Transportation	TKW60223	Transportation	3	6	August 10, 2023 Revised January 19, 2024
AUTHORIZATION Transportation Compartment	RPS DEVELOPER LECTURER		SUBJECT COORDINATOR		HEAD OF BURP
	1. Imma Widyawati Agustin (IWA) 2. Budi Sugiarto Waloejo (BSW) 3. Nailah Firdausiyah (NF) 4. Adipandang Yudono (APY)		IMMA WIDYAWATI AGUSTIN Signature		SEPTIANA HARIYANI Signature
LEARNING OUTCOMES	SLO/ILO (Intended Learning Outcome)				
	1	Able to explain theoretical concepts and apply research methods in the field of urban and regional planning.			
	2	Able to conduct surveys in the field of urban and regional planning, both individually and in groups, effectively and efficiently.			
	3	Able to innovatively apply participatory, comprehensive, and strategic planning processes across various contexts, including urban settlements, rural areas, cities, regions, transportation, and urban design.			
	4	Able to analyze and evaluate problems in the field of urban and regional planning with a comprehensive, advocacy-driven, and innovative rational planning approach.			
	11	Able to demonstrate a responsible attitude toward work in their field of expertise, whether independently or in teams, and to develop organizational and entrepreneurial skills in accordance with laws, values, norms, and ethics.			
	CPMK/CLO (Class Learning Outcome)				
	1	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.			
	2	Able to calculate water transportation infrastructure needs based on artificial intelligence.			
	3	Able to analyze the development prospects and potential of water transportation in island countries through case studies.			
	4	Able to analyze the sustainability of water transportation for tourism and logistics.			
	SUB CPMK/CLO				
	Sub CPMK-1	Explain the definition, history, advantages, resilience, and vulnerability and reliability characteristics of water transportation resilience			Supports CPMK/CLO 1
	Sub CPMK-2	Explaining water transportation policy			Supports CPMK/CLO 1

	Sub CPMK-3	Outline the principles of water transportation	Supports CPMK/CLO 1
	Sub CPMK-4	Calculating water transportation needs based on artificial intelligence	Supports CPMK/CLO 2
	Sub CPMK-5	Analyzing water transportation infrastructure	Supports CPMK/CLO 2
	Sub CPMK-6	Analyze the development prospects of water transportation	Supports CPMK/CLO 3
	Sub CPMK-7	Analyze the potential of water transportation	Supports CPMK/CLO 3
	Sub CPMK-8	Explain the role of water transportation	Supports CPMK/CLO 1
	Sub CPMK-9	Analyzing water transportation for tourism and logistics	Supports CPMK/CLO 4
	Sub CPMK-10	Analyzing the sustainability of water transportation	Supports CPMK/CLO 4
BRIEF DESCRIPTION OF THE COURSE	Elective course Artificial Intelligence-Based Water Transportation is an elective course with the main focus on analysis, planning, and forecasting of future water transportation.		
OVERVIEW	MAIN 1. Septiana hariyani, Imma Widyawati Agustin. 2020. Water Transportation Supporting the Sustainability of a Country. UB Press. Malang. Indonesia 2. Maritime Connectivity in Archipelagic Southeast Asia: An Overview. Keith Trace, Barend Frielink, and Denis Hew, Asian Development Bank, 2009 3. Roll-on Roll-off Transport: Connecting Maritime Southeast Asia. The Asia Foundation. 2010. 4. Bryan, Leslie A. Principles of Water Transportation. New York, NY: The Ronald Press Company, 1939. 5. Hershman, Marc J. Urban Ports and Harbors Management. New York: Taylor & Francis, 1988. 6. Ida Bagus Putu Adnyana, Ngakan Ketut Acwin Dwijendra. 2012. Architecture and Layout of Ports in Bali. Denpasar: Udayana University Press 7. Karel Albert Ralahalu, M. Yamin Jinca et al. 2013. Islands Transportation Development in Indonesia. BRILLIANT INTERNATIONAL  G-book link: https://books.google.co.id/books/about/Transportasi_Air.html?id=BCQOEAAAQBAJ&source=kp_book_description&redir_esc=y		
	SUPPORT 1. Kendall, Lane C. The Business of Shipping. Centerville, MD: Cornell Maritime Press, 1986.		

	2. U.S. Department of Transportation. An Assessment of the U.S. Marine Transportation System: A Report To Congress. September, 1999.
LEARNING MEDIA	SOFTWARE
	Microsoft Office Vissim Online meeting applications (Zoom, webex, Google meet) VLM2 Gapura UB (SIADO and SIAM)
	HARDWARE.
	LCD, laptop, speakers. etc.
TEAM TEACHING	1. Imma Widyawati Agustin (IWA) 2. Budi Sugiarto Waloejo (BSW) 3. Nailah Firdausiyah (NF) 4. Adipandang Yudono (APY)
COURSE REQUIREMENTS	-
Description ILO BURP	1 Able to explain theoretical concepts and apply research methods in the field of urban and regional planning; 2 Able to carry out surveys in the field of regional and urban planning, both individually and in groups effectively and efficiently. 3 Able to apply participatory, comprehensive rational and strategic planning processes innovatively in the scope of urban settlement planning, villages, cities, regions, transportation or urban design. 4 Able to use the processes and methods of infrastructure planning and disaster mitigation; as well as environmental management, information systems, urban management, and public policy. 5 Able to analyze and evaluate problems in the field of URP with a comprehensive, advocative, and innovative rational planning approach. 6 Able to operate software applications that support research, planning and design in the field of URP. 7 Able to apply theories and methods in the field of URP for the integration of planning and development of resilient villages and cities. 8 Able to formulate concepts and prepare spatial physical planning by considering socio-cultural, economic, institutional, and environmental aspects. 9 Able to present concepts and methods communicatively and provide assistance or facilitation in planning activities. 10 Able to compile scientific work and its publication in the form of research or planning results. 11 Apply a responsible attitude to work in their field of expertise independently or in a team and develop organizational and entrepreneurial skills, in accordance with laws, values, norms, and ethics.

PORTFOLIO WEIGHT (MANAGEMENT INFORMATION SYSTEM INPUT)

The following entries are for the evaluation of CMPK/CLO and SLO/ILO achievements

CLO-ILO Weight Mapping

	ILO 1	ILO 2	ILO3	ILO 4	ILO 5	ILO 6	ILO 7	ILO 8	ILO 9	ILO 10	ILO 11	Total
Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.	0,8	0	0	0	0	0	0	0	0	0	0,2	1
Able to calculate water transportation infrastructure needs based on artificial intelligence.	0	0,2	0,3	0,3	0	0	0	0	0	0	0,2	1
Able to analyze the development prospects and potential of water transportation in island countries	0	0,2	0,3	0,3	0	0	0	0	0	0	0,2	1

through case studies.												
Able to analyze the sustainability of water transportation for tourism and logistics.	0	0,2	0,3	0,3	0	0	0	0	0	0	0,2	1

Assessment weight mapping - CPMK/CLO (SIM)

	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.	Able to calculate water transportation infrastructure needs based on artificial intelligence.	Able to analyze the development prospects and potential of water transportation in island countries through case studies.	Able to analyze the sustainability of water transportation for tourism and logistics.	Total
Mid Exam1	1	0	0	0	1
Mid Exam 2	1	0	0	0	1
Mid Exam 3	1	0	0	0	1
CB1	0	0,333	0,333	0,333	1
CB2	0	0,333	0,333	0,333	1
CB3	0	0,333	0,333	0,333	1
CB4	0	0,333	0,333	0,333	1
CB5	0	0,333	0,333	0,333	1
CB6	0	0,333	0,333	0,333	1
CB7	0	0,333	0,333	0,333	1
CB8	0	0,333	0,333	0,333	1
CB9	0	0,333	0,333	0,333	1
CB10	0	0,333	0,333	0,333	1

Final Exam 1	0	0,333	0,333	0,333	1
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Assessment weight mapping - CPMK/CLO (SIADO)

	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.	Able to calculate water transportation infrastructure needs based on artificial intelligence.	Able to analyze the development prospects and potential of water transportation in island countries through case studies.	Able to analyze the sustainability of water transportation for tourism and logistics.	Total
Mid Exam 1	0,05	0	0	0	0,05
Mid Exam 2	0,05	0	0	0	0,05
Mid Exam 3	0,05	0	0	0	0,05
CB1	0	0,0233	0,0233	0,0233	0,07
CB2	0	0,0333	0,0333	0,0333	0,10
CB3	0	0,0333	0,0333	0,0333	0,10
CB4	0	0,0166	0,0166	0,0166	0,05
CB5	0	0,0233	0,0233	0,0233	0,07
CB6	0	0,0233	0,0233	0,0233	0,07
CB7	0	0,0333	0,0333	0,0333	0,10
CB8	0	0,0333	0,0333	0,0333	0,10
CB9	0	0,0233	0,0233	0,0233	0,07
CB10	0	0,0233	0,0233	0,0233	0,07
Final Exam 1	0	0,0166	0,0166	0,0166	0,05
					1

FINAL SCORE WEIGHT (INPUT SIADO LECTURER)

The following fields are for the calculation of student final grades inputted by lecturers to SIADO (OBE menu)

Recapitulation of Percentage of Relationship between CPMK / CLO and Assessment

CPMK/ CLO	DESCRIPTION	Asses sment Code & No.	Mid Exa m 1	Mid Exa m 2	Mid Exa m 3	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	Final Exam 1	Weight (%)
1	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.	Mid Exam Final Exam	5	5	5	0	0	0	0	0	0	0	0	0	0	5	20
2	Able to calculate water transportation infrastructure needs based on artificial intelligence.	CBL	0	0	0	7	10	10	0	0	0	0	0	0	0	0	27
3	Able to analyze the development prospects and potential of water transportation in island countries through case studies.	CBL	0	0	0	0	0	0	5	7	7	0	0	0	0	0	19
4	Able to analyze the sustainability of water transportation for tourism and logistics.	CBL	0	0	0	0	0	0	0	0	0	10	10	7	7	0	34
	Final Score =		5	5	5	7	10	10	5	7	7	10	10	7	7	5	100

***Assessment Case Based Learning**

ILO and CLO relationship and assessment

ILO and IK ILO charged in the Artificial Intelligence-Based Water Transportation course			CLO (CPMK)				Media assessment and its contribution to MK competency scores			Week
ILO	ILO Statement	% CPL/ILO	CLO (CPMK)	CLO Statement (CPMK)	CLO/CPMK Weight (%)	Assessment Media	CBL (%)	Mid Exam (%)	Final Exam (%)	
1	Able to explain theoretical concepts and apply research methods in the field of urban and regional planning.		1	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation;	2,5	Mid Exam 1				1
					2,5	Mid Exam 2				2
					2,5	Mid Exam 3				3
					2,5	Final Exam 1				11
			Total		10		0	7,5	2,5	
2	Able to carry out surveys in the field of regional and urban planning, both individually and in groups effectively and efficiently.		2	Able to calculate water transportation infrastructure needs based on artificial intelligence.	1,75	CBL1				4
					2,5	CBL2				5
					2,5	CBL3				6
			3	Able to analyze the development prospects and potential of water transportation in island and mainland countries through case studies.	1,25	CBL4				7
					1,75	CBL5				9
					1,75	CBL6				10
			4	Able to analyze the sustainability of water	2,5	CBL7				12
					2,5	CBL8				13

ILO and IK ILO charged in the Artificial Intelligence-Based Water Transportation course			CLO (CPMK)				Media assessment and its contribution to MK competency scores			Week			
ILO	ILO Statement	% CPL/ILO	CLO (CPMK)	CLO Statement (CPMK)	CLO/CPMK Weight (%)	Assessment Media	CBL (%)	Mid Exam (%)	Final Exam (%)				
				transportation for tourism and logistics.	1,75	CBL9				14			
					1,75	CBL10				15			
			Total		20		20	0	0				
3	Able to apply innovative participatory, comprehensive rational and strategic planning processes in the scope of urban settlement planning, villages, cities, regions, transportation or design.		2	Able to calculate water transportation infrastructure needs based on artificial intelligence.	1,75	CBL1				4			
					2,5	CBL2				5			
					2,5	CBL3				6			
			3	Able to analyze the development prospects and potential of water transportation in island and mainland countries through case studies.	1,25	CBL4				7			
					1,75	CBL5				9			
					1,75	CBL6				10			
			4	Able to analyze the sustainability of water transportation for tourism and logistics.	2,5	CBL7				12			
					2,5	CBL8				13			
					1,75	CBL9				14			
					1,75	CBL10				15			
			Total		20		20	0	0				
			4	Able to use processes and methods of infrastructure planning and disaster mitigation; as well as		2	Able to calculate water transportation infrastructure needs	1,75	CBL1				4
								2,5	CBL2				5

ILO and IK ILO charged in the Artificial Intelligence-Based Water Transportation course			CLO (CPMK)				Media assessment and its contribution to MK competency scores			Week	
ILO	ILO Statement	% CPL/ILO	CLO (CPMK)	CLO Statement (CPMK)	CLO/CPMK Weight (%)	Assessment Media	CBL (%)	Mid Exam (%)	Final Exam (%)		
	environmental management, information systems, urban management, and public policy.			based on artificial intelligence.	2,5	CBL3				6	
			3	Able to analyze the development prospects and potential of water transportation in island and mainland countries through case studies.	1,25	CBL4				7	
					1,75	CBL5				9	
					1,75	CBL6				10	
			4	Able to analyze the sustainability of water transportation for tourism and logistics.	2,5	CBL7				12	
					2,5	CBL8				13	
					1,75	CBL9				14	
					1,75	CBL10				15	
				Total		20		20	0	0	
	11	Apply a responsible attitude to work in their field of expertise independently or in a team and develop organizational and entrepreneurial skills, in accordance with laws, values, norms, and ethics.		1	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation;	2,5	UTS1				1
2,5						UTS2	2				
2,5						UTS3	3				
2,5						UAS1	11				

ILO and IK ILO charged in the Artificial Intelligence-Based Water Transportation course			CLO (CPMK)				Media assessment and its contribution to MK competency scores			Week
ILO	ILO Statement	% CPL/ILO	CLO (CPMK)	CLO Statement (CPMK)	CLO/CPMK Weight (%)	Assessment Media	CBL (%)	Mid Exam (%)	Final Exam (%)	
			2	Able to calculate water transportation infrastructure needs based on artificial intelligence.	1,75	CBL1				4
					2,5	CBL2				5
					2,5	CBL3				6
			3	Able to analyze the development prospects and potential of water transportation in island and mainland countries through case studies.	1,25	CBL4				7
					1,75	CBL5				9
					1,75	CBL6				10
			4	Able to analyze the sustainability of water transportation for tourism and logistics.	2,5	CBL7				12
					2,5	CBL8				13
					1,75	CBL9				14
					1,75	CBL10				15
			Total				30		20	7,5
TOTAL = 100							80	15	5	

Recapitulation of Percentage Relationship between CLO and Assessment

	ILO 1	ILO 2	ILO 3	ILO 4	ILO 11
CLO 1	10	0	0	0	10
CLO 2	0	6,75	6,75	6,75	6,75
CLO 3	0	4,75	4,75	4,75	4,75
CLO 4	0	8,5	8,5	8,5	8,5
Weight	10	20	20	20	10

Description: Filled in yellow

Recapitulation of Percentage of CPMK/CLO and SLO/ILO Relationships

CLO	DESCRIPTION	CBL	Mid Exam	Final Exam	
CLO 1	Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.	0	15	5	
CLO 2	Able to calculate water transportation infrastructure needs based on artificial intelligence.	27	0	0	
CLO 3	Able to analyze the development prospects and potential of water transportation in island countries through case studies.	19	0	0	
CLO 4	Able to analyze the sustainability of water transportation for tourism and logistics.	34	0	0	
Final Score =		80	15	5	

***20% of Case Based Learning assessment**

COURSE LEARNING OUTCOMES (CPMK) ARTIFICIAL INTELLIGENCE-BASED WATER TRANSPORTATION:

- Able to explain the definition, history, role, types, policies of water transportation; outline the principles of water transportation.
- Able to calculate water transportation infrastructure needs based on artificial intelligence.
- Able to analyze the development prospects and potential of water transportation in island countries through case studies.
- Able to analyze the sustainability of water transportation for tourism and logistics.

END OF SEMESTER TEST (Mg. 16)

Sub CPMK-10. Analyze the sustainability of water transportation (C-4)

Sub CPMK-9. Analyze water transportation for tourism and logistics (C-4)

Sub CPMK-8. Explain the role of water transportation (C-2)

Sub CPMK-7. Analyze the potential of water transportation (C-4)

MID SEMESTER TEST (Mg. 8)

Sub-CLO 1. Explain the definition, history, advantages, resilience, and vulnerability and reliability characteristics of water transportation resilience (C-2)

Sub CPMK-2. Explain water transportation policy (C-2)

Sub CPMK-6. Outline the prospects for the development of water transportation (C-4)

Sub CPMK-3. Outline the principles of water transportation (C-2)

Sub CPMK-4. Calculate water transportation needs based on artificial intelligence (C-3)

Sub CPMK-5. Analyze water transportation infrastructure (C-4)

RPS (Semester Learning Plan) Details Per Week

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
1 (IWA)	SUB CPMK-1: Explain the definition, history, advantages, resilience, and vulnerability and reliability characteristics of water transportation resilience	1. Accuracy in explaining the definition, history, advantages, resilience, and characteristics of vulnerability and reliability of water transportation resilience	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. Assessment: Test: Mid Exam 1 essay question Non Test: -	• Lecture. • Lecture • Discussion • Mid Exam 1	Lecture: 2x 50 minutes Discussion: 50 minutes Assignments and self-study: 60 minutes + 50 Minutes		5
2 (BSW)	SUB CPMK-1: Explain, water transportation policy.	1. Accuracy in explaining water transportation policy	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. Assessment: Test: Mid Exam 2 essay question Non Test: -	• Lecture. • Lecture • Discussion • Mid Exam 2	Lecture: 2x 50 minutes Discussion: 50 minutes Assignments and self-study: 60 minutes + 50 Minutes		5
3 (BSW)	SUB CPMK-1: Outline the principles of water transportation.	1. Accuracy in describing the principles of	Criteria: 1. Clarity of discussion and description according to the explanation of lecture	• Lecture. • Lecture • Discussion • Mid Exam 3	Lecture: 2x 50 minutes Discussion: 50 minutes		5

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
		water transportation	material and other related sources. Assessment: Test: Mid Exam 3 essay question Non Test: -	•	Assignments and self-study: 60 minutes + 50 Minutes		
4 (BSW)	SUB CPMK-1: Calculating water transportation needs.	1. Accuracy in calculating water transportation needs	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 1: Field Observation (Structured Assignment)	• Lecture. Lecture • Discussion • CBL 1: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-1: 60 minutes + 50 Minutes		7
5 (IWA)	SUB CPMK-1: Analyze water transportation infrastructure in island nations	Accuracy in analyzing water transportation infrastructure in archipelagic countries	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and	• Lecture. Lecture • Discussion • CBL 2: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-2: 60 minutes + 50 Minutes		10

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
			clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 2: Field Observation (Structured Assignment)				
6 (IWA)	SUB CPMK-1: Analyze water transportation infrastructure in mainland countries	1. Accuracy in analyzing water transportation infrastructure in mainland countries	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 3: Field Observation (Structured Assignment)	• Lecture. Lecture • Discussion • CBL 3: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-3: 60 minutes + 50 Minutes		10
7 (IWA)	SUB CPMK-2: Analyze the development prospects of water transportation	1. Accuracy in explaining the prospects for water transportation development.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources.	• Lecture. Lecture • Discussion • CBL 4: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-4: 60 minutes + 50 Minutes		5

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
		2. Accuracy in analyzing the development prospects of water transportation.	2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 4: Field Observation (Structured Assignment)				
IWA & BSW	Midterm Exam						
9 (APY)	SUB CPMK-2: Analyze the potential of water transportation in archipelagic countries.	1. Accuracy in explaining the potential of water transportation in archipelagic countries. 2. Accuracy in analyzing the potential of water transportation in archipelagic countries.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 5: Field Observation (Structured Assignment)	● Lecture. Lecture ● Discussion ● CBL 5: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-5: 60 minutes + 50 Minutes		7

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
10 (APY)	SUB CPMK-2: Analyze the potential of water transportation in mainland countries.	1. Accuracy in explaining the potential of water transportation in mainland countries. 2. Accuracy in analyzing the potential of water transportation in mainland countries.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 6: Field Observation (Structured Assignment)	• Lecture. Lecture • Discussion • CBL 6: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-6: 60 minutes + 50 Minutes		7
11 (NF)	SUB CPMK-1: Explain the role of water transportation.	1. Accuracy in explaining the role of water transportation in archipelagic and mainland countries.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. Assessment: Test: Final Exam 1 essay question Non Test: -	• Lecture. Lecture • Discussion • Final Exam 1 •	Lecture: 2x 50 minutes Discussion: 50 minutes Assignments and self-study: 60 minutes + 50 Minutes		5
12 (NF)	SUB CPMK-3: Analyze water transportation for tourism	1. Accuracy in explaining water transportation	Criteria: 1. Clarity of discussion and description according to the explanation of lecture	• Lecture. Lecture • Discussion	Lecture: 2x 50 minutes Discussion: 50 minutes		10

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
	and logistics in island countries.	for tourism and logistics in island countries. 2. Accuracy in analyzing water transportation for tourism and logistics in island countries.	material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 7: Field Observation (Structured Assignment)	● CBL 7: Field Observation (Structured Assignment)	CBL-7: 60 minutes + 50 Minutes		
13 (NF)	SUB CPMK-3: Analyze water transportation for tourism and logistics in mainland countries.	1. Accuracy in explaining water transportation for tourism and logistics in mainland countries. 2. Accuracy in analyzing water transportation for tourism and logistics in mainland countries.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 8: Field Observation (Structured Assignment)	● Lecture. Lecture ● Discussion ● CBL 8: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-8: 60 minutes + 50 Minutes		10

Week	Sub CPMK/CLO (Supports CLO to)	Indicator	Form of Assessment	Learning Methods	Time (duration)	Learning Material / Study Material [Literature]	Value Weight
14 (NF)	SUB CPMK-4: Analyzing the sustainability of water transport-1	1. Accuracy in explaining the sustainability of water transportation. 2. Accuracy in evaluating water transportation.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment: CBL 9: Field Observation (Structured Assignment)	• Lecture. Lecture • Discussion • CBL 9: Field Observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-9: 60 minutes + 50 Minutes		7
15 (APY)	SUB CPMK-4: analyzing the sustainability of water transport-2	1. Accuracy in explaining the sustainability of water transportation. 2. Accuracy in evaluating water transportation.	Criteria: 1. Clarity of discussion and description according to the explanation of lecture material and other related sources. 2. Accuracy in the use of analytical methods and clear sources, in accordance with the description of the lecture explanation. Assessment:	• Lecture. Lecture • Discussion • CBL 10: Field observation (Structured Assignment)	Lecture: 2x 50 minutes Discussion: 50 minutes CBL-10: 60 minutes + 50 Minutes		7

[illegible]

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	1	Week 1	:	4
Date Assignment Given	:	Week 4	Date Assignment Collected	:	Week 8
CPMK	:	1	CBL	:	1

1. Task Purpose

Students are able to analyze water transportation needs

2. Task Description

- a. Objective: prepare a paper on the water transportation needs of island and mainland countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	2	Week 1	:	5
Date Assignment Given	:	Week 5	Date Assignment Collected	:	Week 8
CPMK	:	1	CBL	:	2

1. Task Purpose

Students are able to analyze water transportation infrastructure in island countries.

2. Task Description

- a. Objective: prepare a paper on water transportation infrastructure in island countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	3	Week 1	:	6
Date Assignment Given	:	Week 6	Date Assignment Collected	:	Week 8
CPMK	:	1	CBL	:	3

1. Task Purpose

Students are able to analyze water transportation infrastructure in mainland countries.

2. Task Description

- a. Objective: prepare a paper on water transportation infrastructure in mainland countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case studies is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	4	Week 1	:	7
Date Assignment Given	:	Week 7	Date Assignment Collected	:	Week 8
CPMK	:	2	CBL	:	4

1. Task Purpose

Students are able to analyze the prospects for developing water transportation.

2. Task Description

- a. Object of the assignment: prepare a paper on the prospects for developing water transportation in island and mainland countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	5	Week 1	:	9
Date Assignment Given	:	Week 9	Date Assignment Collected	:	Week 16
CPMK	:	2	CBL	:	5

1. Task Purpose

Students are able to analyze the potential of water transportation in archipelagic countries .

2. Task Description

- a. Objective: prepare a paper on the potential of water transportation in an island nation.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	6	Week 1	:	10
Date Assignment Given	:	Week 10	Date Assignment Collected	:	Week 16
CPMK	:	2	CBL	:	6

1. Task Purpose

Students are able to analyze the potential of water transportation in mainland countries.

2. Task Description

- a. Objective: prepare a paper on the potential of water transportation in mainland countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case studies is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	7	Week 1	:	12
Date Assignment Given	:	Week 12	Date Assignment Collected	:	Week 16
CPMK	:	3	CBL	:	7

1. Task Purpose

Students are able to analyze, and conclude water transportation for tourism and logistics in island countries.

2. Task Description

- a. Objective: prepare a paper on water transportation for tourism and logistics in island countries.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion ● good continuity between chapters

Very good	> 80-100	- Recent and valid literature - sharp and original discussion - the continuity between chapters is very good.
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TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	8	Week 1	:	13
Date Assignment Given	:	Week 13	Date Assignment Collected	:	Week 16
CPMK	:	3	CBL	:	8

1. Task Purpose

Students are able to analyze, and conclude water transportation for tourism and logistics in mainland countries.

2. Task Description

- Objective: prepare a paper on water transportation for tourism and logistics in mainland countries.
- Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	- No literature - unfounded study selection - discussion is not appropriate - poor continuity between chapters
Less	21 - 40	- Literature is lacking and many are invalid - selection of case study is not appropriate - less discussion - less continuity between chapters
Simply	41 - 60	- The literature is sufficient and some are still invalid - good case study selection - less discussion - sufficient continuity between chapters
Good	61 - 80	- Sufficient literature - selection of interesting case studies - interesting discussion - good continuity between chapters

Very good	> 80-100	- Recent and valid literature - sharp and original discussion - the continuity between chapters is very good.
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TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	9	Week 1	:	14
Date Assignment Given	:	Week 14	Date Assignment Collected	:	Week 16
CPMK	:	4	CBL	:	9

1. Task Purpose

Students are able to evaluate the sustainability of water transportation in island countries.

2. Task Description

- a. Object of the assignment: prepare a paper on the sustainability of water transportation in island nations.
- b. Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- c. Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- d. Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	- No literature - unfounded study selection - discussion is not appropriate - poor continuity between chapters
Less	21 - 40	- Literature is lacking and many are invalid - selection of case study is not appropriate - less discussion - less continuity between chapters
Simply	41 - 60	- The literature is sufficient and some are still invalid - good case study selection - less discussion - sufficient continuity between chapters
Good	61 - 80	- Sufficient literature - selection of interesting case studies - interesting discussion

		● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

TASK FORMAT (ASSESSMENT)

Course Content	:	Artificial Intelligence-Based Water Transportation			
Semester	:	5	Credits	:	3
Task To	:	10	Week 1	:	15
Date Assignment Given	:	Week 15	Date Assignment Collected	:	Week 16
CPMK	:	4	CBL	:	10

1. Task Purpose

Students are able to evaluate the sustainability of water transportation in mainland countries.

2. Task Description

- Object of the assignment: prepare a paper on the sustainability of water transportation in mainland countries.
- Assignment boundaries: collect literature, compile/design an outline of the content of the paper according to the topic. Prepare the paper based on the latest issues.
- Method / way of working: papers in accordance with the rules of scientific writing by correctly adapting from competent and scientific sources in the form of journals, books and scientific articles whose sources are clear.
- Expected output: a scientific paper written on A4 paper with a standard format, accompanied by attachments if needed.

3. Assessment Criteria

- Literature 20%
- Discussion of selected cases 30%
- 20% issue selection
- 30% final report

Task grading scale:

Grade	Score	Indicator
Very less	< 20	● No literature ● unfounded study selection ● discussion is not appropriate ● poor continuity between chapters
Less	21 - 40	● Literature is lacking and many are invalid ● selection of case study is not appropriate ● less discussion ● less continuity between chapters
Simply	41 - 60	● The literature is sufficient and some are still invalid ● good case study selection ● less discussion ● sufficient continuity between chapters
Good	61 - 80	● Sufficient literature ● selection of interesting case studies ● interesting discussion

		● good continuity between chapters
Very good	> 80-100	● Recent and valid literature ● sharp and original discussion ● the continuity between chapters is very good.

MIDTER & FINAL SEMESTER ASSESSMENT RUBRICKS (ESSAY and Multiple Choice)

Test Type : Completion of questions according to the material

Assessment type : Holistic/descriptive rubric

Assessment Criteria :

Dimensions	Criteria	Maximum Value	Bad 0-55	Simply 56-69	Good 70-80	Very good 81-100
Able to explain theoretical concepts and apply research methods in the field of water transportation planning	• Explain theoretical concepts in the field of urban and regional planning • Apply research and methods in the field of water transportation planning	10	Unable to translate the problem into all comprehensive parameters	Able to translate the problem into 30% comprehensive parameters	Able to translate questions into 60% comprehensive parameters	Able to translate the problem into 90% comprehensive parameters
Able to use water transportation planning processes and methods	• Using processes and methods Water transportation planning	30	Does not use applicable standards/references in solving problems	Use 30% of applicable standards/references in solving problems	Use 60% of applicable standards/references in solving problems	Use 90% of applicable standards/references in solving problems
Able to operate software applications that support research,	• Use data management, analysis and evaluation	30	Completion steps are entirely NOT sequential, NOT complete and NOT	The solution steps are only 30% sequential, complete	The solution steps are only 60% sequential, complete	The solution steps are only 90% sequential, complete

Dimensions	Criteria	Maximum Value	Bad 0-55	Simply 56-69	Good 70-80	Very good 81-100
planning of water transportation	applications in the field of water transportation research and planning.		precise in results and units	and precise in results and units.	and precise in results and units.	and precise in results and units
Able to apply theories and methods in the field of URP for the integration of water transportation planning	Explain the theory, methods, and interaction concepts of water transportation planning	20	The final result is entirely incorrect and there is NO interpretation.	The final result is only 30% correct and there is an interpretation.	The final result is only 60% correct and there is an interpretation.	The final result is only 90% correct and there is an interpretation.
Apply a responsible attitude to work in their field of expertise independently or in a team and develop organizational and entrepreneurial skills, in accordance with laws, values, norms, and ethics.	- Apply a responsible attitude in the tasks that are his responsibility - Use knowledge in the field of transportation planning to manage and lead in a team or organization. - Apply attitudes in accordance with the laws, values, norms,	10	Completing tasks not on time	Completes tasks on time and 30% complete as requested	Completes tasks on time and 70% complete as requested	Complete the task on time and 100% complete as requested

Dimensions	Criteria	Maximum Value	Bad 0-55	Simply 56-69	Good 70-80	Very good 81-100
	and ethics of the planning profession					

