



### Course description

Generic information		
Head of Course	Dražen Žgaljić, PhD	
Course	Strategic development of the transport system	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 0 + 0

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

Familiarizing students with the methodology of developing strategic documents in the maritime system. Introducing the meaning and basic contents of transport policy. The course covers fundamental principles, goals, and measures for implementing successful transport development at both the national level and within the European Union. Students will become acquainted with the main guidelines of European maritime and transport policy, as well as the development strategies for transport in the Republic of Croatia.

### 1.2. Prerequisites for Course Registration

None

### 1.3. Expected Learning Outcomes

After completing and passing the course, the student will be able to:

- ☐ Understand and explain the goals and measures of transport policy
- ☐ Analyze the stakeholders and instruments of transport policy
- ☐ Comment on the methodology for developing strategic documents in the transport system
- ☐ Explain the characteristics of public transport policy
- ☐ Differentiate the specifics of ownership policy, tariff policy, investment policy, and protectionist policy
- ☐ Present the importance of transport policy in relation to economic development policy, environmental protection policy, and regional development policy

### 1.4. Course Outline

The importance of the strategic development of the transport system. The concept, significance, and role of transport policy. Stakeholders, goals, and instruments of transport policy. Defining the scope of transport policy. The importance of transport policy in creating a socially and environmentally sustainable transport system. Public transport policy and the role of the state. The importance of the port system for the competitiveness of transport corridors. The relationship between maritime policy and the competitiveness of transport corridors. Trans-European networks and policies regarding transport infrastructure. European Union transport policy, principles, goals, and instruments. Transport policy of the Republic of Croatia.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments					
1.7. Student Obligations					
Student obligations include: regular class attendance, a seminar, midterm exams, and a final exam. <input type="checkbox"/> 1st midterm exam – 30% <input type="checkbox"/> 2nd midterm exam – 30% <input type="checkbox"/> Attendance – 10% <input type="checkbox"/> Final exam – 30%					
1.8. Assessment <sup>1</sup> of Learning Outcomes					
Course attendance	1	Class participation		Seminar paper	Experiment
Written exam	2	Oral exam		Essay	Research
Project		Continuous Assessment	2	Presentation	Practical work
Portfolio					

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation of acquired learning outcomes is carried out in accordance with the Regulations on Study Programs of the University of Rijeka and the Study Regulations of the Faculty of Maritime Studies in Rijeka, as follows:

1. Through continuous knowledge assessment during classes, 60% of the acquired learning outcomes are evaluated within the 1st midterm exam (30%) and the 2nd midterm exam (30%). The student must achieve at least 50% of the points on each midterm exam;
2. Attendance at classes is evaluated with 10% of the acquired learning outcomes;
3. The final exam accounts for 30% of the acquired learning outcomes, and the student must achieve at least 50% of the available points on the final exam to pass. Examples of learning outcome assessments in relation to the defined learning outcomes include:

Examples of assessing learning outcomes in relation to the set learning objectives are:

1. Describe the concept, significance, and role of a country's transport policy.
2. Analyze and describe the relationship between transport policy and the competitiveness of transport corridors.
3. Describe the impact of transport policy on the choice of cargo transport modalities.
4. Explain the importance of developing transnational transport networks in the European Union.
5. Describe the European Union's efforts to develop an environmentally and socially acceptable transport system.
6. Propose measures for the future transport development of the Republic of Croatia.

### 1.10. Main Reading

1. Dundović, Č., Grubišić, N.: Pomorska i prometna politika, Pomorski fakultet u Rijeci, Rijeka, 2013.
2. Pomorstvo - Hrvatska u 21. stoljeću / urednica Kesić, B., Ured za strategiju razvitka Republike Hrvatske, Zagreb, 2001.
3. Study materials available at e-learning platform (<https://moodle.srce.hr>)

### 1.11. Recommended Reading

- 1) Commission of the European Communities: Communication and Action Plan with a View to Establishing a European Maritime Transport Space without Barriers, COM (2009) 10 final, Office for Official Publications of the European Communities, Luxembourg.
- 2) Commission of the European Communities: Communication and Proposals by the Commission to the Council. Progress towards a Common Transport Policy. Maritime transport, COM(1985) 90 final, Office for Official Publications of the European Communities, Luxembourg.
- 3) Commission of the European Communities: Communication from the Commission. The Future Development of the Common Transport Policy: A Global Approach to the Construction of a Community Framework for Sustainable Mobility, COM(1992) 494 final, Office for Official Publications of the European Communities, Luxembourg.
- 4) Commission of the European Communities: Communication from the Commission – Programme for the Promotion of Short Sea Shipping & Proposal for a Directive of the European Parliament and of the Council on Intermodal Loading Units, COM(2003) 155 final, Office for Official Publications of the European Communities, Luxembourg.
- 5) Commission of the European Communities: Communication from the Commission to the Council and the European Parliament. Keep Europe Moving – Sustainable Mobility for our Continent. Mid-term Review of the European Commission's 2001 Transport White Paper, COM(2006) 0314 final, Office for Official Publications of the European Communities, Luxembourg.
- 6) Commission of the European Communities: Communication of the commission to the council on the development of the common transport policy, COM(1979) 1705 final, Bulletin of the European Communities, Luxembourg.



**1.12. Number of Main Reading Examples**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Dundović, Č., Grubišić, N.: Pomorska i prometna politika	10	50
Study materials available at e-learning platform ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	unlimited	

**1.13. Quality Assurance**

The quality of studies is monitored in accordance with the ISO 9001 system and European standards and guidelines for quality assurance (ESG), which are implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rates are analyzed, and appropriate measures are taken.



### Course description

Generic information			
Head of Course	Ana Perić Hadžić, PhD		
Course	Scientific Research Methodology		
Study Programme	Logistics and Management in Maritime Industry and Transport		
Type of Course	Mandatory		
Year of Study	1		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4	
	Number of Hours (L+E+S)	30+0+15	

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

*The aim of the course is to learn the basic knowledge about concepts of methodology and technology of scientific and professional research, and their training of students for the application of student works at the level of graduate studies.*

### 1.2. Prerequisites for Course Registration

None

### 1.3. Expected Learning Outcomes

After passing the exam from this course, students will be able to:

1. define and clearly distinguish between scientific concepts, scientific research work and scientific research activity
2. analyze fundamental and developmental characteristics of science and research focusing on contemporary social and technological processes
3. classify science fields in Republic of Croatia in accordance with the applicable legislative framework
4. define, understand and interpret fundamental scientific categories through specific examples in research process framework.
5. distinguish and classify types and structure of scientific, scientific research and professional papers and critically evaluate their relevance
6. describe, classify and compare key scientific methods, and analyze its purpose in specific research projects.
7. interpret and apply technology of scientific research by mastering the phases of research process.
8. apply methodological and technological scientific research principles in creation, writing, structuring students papers in higher education.

### 1.4. Course Outline

Science, scientific activity and research: Theory of Science, characteristics of contemporary science, Croatia in science, Croatian classification framework, scientific and technological policy of the Republic of Croatia, classification of science. Scientific, scientific and professional works: classification of written works, concept and types of scientific works, concept and types of scientific professional works, concept and types of professional parts, works on undergraduate and graduate studies, works on postgraduate studies. The concept and features of the scientific method. Scientific research methodology. Scientific research technology: recognition of scientific problems, placement of hypotheses, selection and analysis of topics (titles), development of research plan, drafting of work bibliography, collection and study of literature and



scientific information, solving the problem, formulating the results of research, applying the results of research, controlling of the application of research results. Writing text and technical processing of scientific and professional work: Documentation Base of the manuscript, reading of literature, referencing in the text, European quoting system, Harvard (American) quoting system, illustration showing.

*1.5. Modes of Instruction*

☒ Lectures

☒ Seminars and workshops

☐ Exercises

☐ E-learning

☐ Field work

☒ Practical work

☐ Multimedia and Network

☐ Laboratory

☐ Mentorship

☐ Other \_\_\_\_\_

*1.6. Comments*

*1.7. Student Obligations*

The student must be present for at least 70% of the total hours in lectures and tutorials and have passed continuous assessments and written an independent seminar paper to be admitted to the final exam.

*1.8. Assessment<sup>1</sup> of Learning Outcomes*

Course attendance	1,5	Class participation		Seminar paper	1	Experiment	
Written exam		Oral exam	0,5	Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

*1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam*

The final grade of the student's success in the course is the sum of the percentage of success achieved by the student during classes (70% of the grade) and the percentage of success achieved in the final exam (30% of the grade) according to the rules of the University of Rijeka and the Faculty of Maritime Studies in Rijeka.

Continuous assessment of knowledge:

- 1<sup>st</sup> assessment – it is necessary to achieve a minimum of 50% correct answers
- 2<sup>nd</sup> assessment – it is necessary to achieve a minimum of 50% correct answers
- Seminar paper – it is necessary to show the acquired knowledge and application of technology and methodology

Final exam:

- At the final exam it is necessary to achieve a minimum of 50% correct answers.

Examples of assessment of learning outcomes in relation to established learning outcomes are:

1. define the terms science and scientific research
2. explain the development characteristics of science
3. name the scientific fields in Croatia according to the latest qualification of science from 2009 (Regulation on Scientific and Artistic Fields, Areas and Branches, NN, 2009).
4. explain what the problem and the object of research is and give an example
5. explain what a journal is as a work and to which category the work belongs
6. define compilation methods and explain how we use them
7. name the stages of scientific research technique
8. prepare a seminar paper in which you apply the principles of methodology and technology of scientific research.



**1.10. Main Reading**

1. Zelenika, R.: Metodologija i tehnologija izrade znanstvenog i stručnog djela, Pisana djela na stručnim i sveučilišnim studijima, knjiga peta, Ekonomski fakultet u Rijeci, Rijeka, 2011.
2. Teaching material available on the e-learning platform MERLIN (online materials)
3. Instructions for the preparation of the thesis, University of Rijeka, Faculty of Maritime Studies, 2020 (online materials)

**1.11. Recommended Reading**

1. Kulenović, Z.: Metodologija istraživačkog rada, Pomorski fakultet Sveučilišta u Splitu, Split 2005.
2. Žugaj, M., Dumičić, K., Dušak, V.: Temelji znanstvenoistraživačkog rada : metodologija i metodika , 2. dop. i izmijenjeno izdanje, Varaždin, Tiva , 2006

**1.12. Number of Main Reading Examples**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Zelenika, R.: Metodologija i tehnologija izrade znanstvenog i stručnog djela, Pisana djela na stručnim i sveučilišnim studijima, knjiga peta, Ekonomski fakultet u Rijeci, Rijeka, 2011.	6	50
Teaching material available on the e-learning platform MERLIN (online materials)	Unlimited	50
Instructions for the preparation of the thesis, University of Rijeka, Faculty of Maritime Studies, 2020 (online materials)	Unlimited	50

**1.13. Quality Assurance**

The quality of studies is monitored in accordance with the system ISO 9001 and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of passability are analyzed and appropriate measures are taken.



### 3.2. Course description

Generic information		
Head of Course	Edvard Tijan, PhD	
Course	Human Resource Management	
Study Programme	Logistics and Management in Maritime Industry and Transport, graduate level	
Type of Course	mandatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30 + 0 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to familiarize students with the meaning and characteristics of human potential management. The principles, functions, and processes of managing human potential in business systems are studied. Through the course, students are introduced to the theoretical and practical foundations of human potential management, as well as strategies for personnel development and promotion.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

After passing the exam, students will be able to:

1. Correctly interpret the role and significance of human capital
2. Analyze and describe job positions, tasks, and assignments
3. Identify the legal regulations applicable to employment relationships
4. Conduct tests and interviews related to candidate selection for the purpose of concluding employment contracts
5. Describe the phases of onboarding employees
6. Determine the criteria and methods for motivating and rewarding employees
7. Compare and apply techniques for evaluating employee performance

##### 1.4. Course Outline





1. Theoretical perspectives of human resource management
2. Interdependence of personnel development and the company
3. Functions and objectives of human resource management
4. The importance and role of human resources within a company
5. Teamwork - managing processes and relationships
6. Job design and analysis
7. Planning, recruitment, and selection of personnel
8. Procedures for selecting managers and employees
9. Legal framework of employment relationships
10. Conclusion and termination of employment contracts
11. Employment and onboarding policies
12. Employee motivation
13. Knowledge innovation in the business system
14. Evaluation of work efficiency and business excellence

1.5. Modes of Instruction

☒ Lectures

☐ Seminars and workshops

☐ Exercises

☐ E-learning

☐ Field work

☒ Practical work

☒ Multimedia and Network

☐ Laboratory

☐ Mentorship

☐ Other \_\_\_\_\_

1.6. Comments

1.7. Student Obligations

1. Attendance of classes
2. Classroom activity
3. Taking the midterm exam
4. Taking the final exam

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	0,5	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Continuous assessment and grading include classroom activity and two midterm exams, followed by the final exam. Assessment is conducted in accordance with the current university and faculty regulations on studying. During continuous assessment, students can earn up to 70% of the total course points, and the remaining 30% can be earned on the final exam.

On each midterm exam, it is necessary to achieve at least 50% of the points possible on that exam.

Through continuous classroom assessment (midterm exams and classroom activity), students must cumulatively achieve at least 35% of the total course points (out of the possible 70%) in order to be eligible to take the final exam.

On the final exam, students can earn 30% of the total course points (with students required to achieve at least 50% of the points possible on the final exam to pass it).

Attendance at lectures is mandatory, and student attendance will be monitored. Students may miss a maximum of 50% of the classes.

Learning outcome 1: Explain the difference between human capital and human potential.

Learning outcome 2: What is the difference between job (work) analysis and position analysis?

Learning outcome 3: State the differences between regular and extraordinary termination of an employment contract.

Learning outcome 4: Select appropriate tests for different job positions and explain the methods of implementation.

Learning outcome 5: Develop a plan for onboarding a new employee.

Learning outcome 6: Design a system for motivating and rewarding employees that consists of both material and non-material components.

Learning outcome 7: List and compare techniques for assessing work efficiency.

### 1.10. Main Reading

1. Edvard Tijan, Human Resource Management, on-line courses (Merlin)
2. Vujić, V.: Menadžment ljudskog kapitala – 3. izdanje, Sveučilište u Rijeci, Fakultet za menadžment u turizmu i ugostiteljstvu, Opatija, 2008.

### 1.11. Recommended Reading

1. Hodžić, A., Aksentijević, S., Tijan, E.: Razvoj i upravljanje karijerama // Savremeni trendovi i kvalitet u upravljanju ljudskim resursima - Zbornik radova. Beograd: Visoka škola strukovnih studija za ekonomiju i upravu Centar za ekonomska istraživanja (CEIB) Beograd, 2015. str. 75-89
2. Aksentijević, S., Tijan, E., Marinković, B.: Strategija upravljanja ljudskim resursima u prometnim poduzećima // Pomorski zbornik, 49-50 (2015), 1; 281-303
3. Bahtijarević Šiber, F., Management ljudskih potencijala, Golden marketing, Zagreb, 1999.
4. Dessler, G., Human Resource Management, Prentice Hall, New Jersey, 2003.
5. Vujić, V. i drugi: Korporativno upravljanje – Hrvatsko udruženje menadžera i poduzetnika, Zagreb, 2008.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Edvard Tijan, Human Resource Management, on-line courses (Merlin)		
Vujić, V.: Menadžment ljudskog kapitala – 3. izdanje, Sveučilište u Rijeci, Fakultet za menadžment u turizmu i ugostiteljstvu, Opatija, 2008.	5	30



1.13.

*Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in line with European standards and guidelines for quality assurance implemented at the University of Rijeka, Faculty of Maritime Studies. Once a year, the pass rates are analyzed and appropriate measures are taken (an anonymous survey is conducted in which students evaluate the quality of delivered teaching). An analysis of student performance on completed exams is also carried out.



### 3.2. Course description

Generic information			
Head of Course	Alen Jugović, PhD		
Course	Economics and organization of maritime passenger transport		
Study Programme	Logistics and Management in Maritime Industry and Transport		
Type of Course	Mandatory		
Year of Study	1 <sup>st</sup>		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5	
	Number of Hours (L+E+S)	30 + 0 + 15	

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*The main objective of the course is to train students to assess the key features and factors of maritime passenger transport that contribute to the development of transport infrastructure, superstructure, urban areas, island communities and their connection with the maritime and tourism system of the Republic of Croatia. Through project assignments, students will apply the acquired knowledge to concrete examples from practice, analyzing the operations of passenger ports, shipping companies and other participants in maritime passenger services, with an emphasis on the application of basic economic principles.*

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

1. Explain the basic concepts of maritime passenger transport.
2. Evaluate the characteristics of passenger ports, their connection with tourism and the economy, and especially their importance for the development of islands.
3. Determine the characteristics of liner maritime passenger transport.
4. Analyze the trends in the development of nautical tourism ports in the coastal area and on the islands, and determine their impact on the sustainable development of the destination.
5. Evaluate the significance and impact of management and organization on the development of maritime passenger services.
6. Examine the multiplicative effects of maritime passenger ports.

##### 1.4. Course Outline



RELEVANT FEATURES OF SEA PASSENGER PORTS. Concept, functions and development of ports. City-port interconnection. Business technology and active participants in sea passenger ports. STATE AND SIGNIFICANCE OF SEA PASSENGER PORTS AND PASSENGER SHIPS IN THE WORLD AND EUROPE. Liner passenger transport. Business analysis, specific features of the privatization process. Features of sea passenger shipping. MANAGEMENT OF SEA PASSENGER PORTS IN THE WORLD AND IN THE REPUBLIC OF CROATIA. Legal framework and principles of sea passenger port operations. Management of sea passenger ports. Management of ports of county and local importance for the Republic of Croatia. Management of nautical tourism ports. LOGISTICS AND ECONOMIC FACTORS OF THE DEVELOPMENT OF SEA PASSENGER PORTS AND SHIPPING. Economic indicators and logistics of sea passenger ports development. Multiplicative effects of sea passenger ports. The role of tourism in the development of maritime passenger transport. Basics of cruise tourism. Cruise ships.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input checked="" type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input checked="" type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____				
	1.6. Comments						
1.7. Student Obligations							
1) Attending classes 2) Attending seminars 3) Taking midterm exams 4) Creating a project assignment 5) Final exam							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project	1	Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment and evaluation of student work includes class attendance, continuous assessment of knowledge through two midterm exams, preparation and presentation of a project assignment, and a final exam. Assessment is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka, which implies that a student can achieve 70% of the grade during classes, and the remaining 30% at the final exam.

Assessment of knowledge in classes is carried out continuously, and students can achieve the percentage of the grade as follows:

- 1<sup>st</sup> midterm exam - 25% Learning outcomes: 1.- 6.
- 2<sup>nd</sup> midterm exam - 25% Learning outcomes: 1.- 6.
- Project assignment - 20% Learning outcomes: 1.- 6.
- Final exam - 30% Learning outcomes: 1.- 6.

The final exam can be taken by students who have gained 35 grade points during classes, or 50% of the total number of points that could be achieved during the assessment in classes. It is also a requirement that students achieve at least 50% of the points on each preliminary exam. The final exam is in written form and comprises 30% of the total grade. Students must satisfy 50% of the final exam in order to achieve a positive grade in the course.

Some examples of learning outcome evaluation are:

- 1) What do we mean by the term maritime passenger transport and how does it differ from other types of maritime transport?
- 2) Explain the connection of a passenger port with tourism and the economy of a municipality/city.
- 3) List the basic characteristics of regular maritime passenger transport.
- 4) How can the development of marinas and ports of nautical tourism contribute to the sustainable development of a tourist destination? Provide a specific example.
- 5) Explain the importance of management and organization for the provision of maritime passenger services.
- 6) Identify and analyze the micro and macro multiplicative effects of a maritime passenger port.

### 1.10. Main Reading

1. Teaching materials on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Kesić, B.; Jugović, A.: Menadžment pomorskoputničkih luka, Sveučilište u Rijeci, Pomorski fakultet Rijeka & Liber d.o.o., Rijeka, 2006.
3. Peručić, D.: Cruising-turizam – razvoj, strategije i ključni nositelji, Sveučilište u Dubrovniku, Dubrovnik, 2013.

### 1.11. Recommended Reading



1. Jugović, A., Zaninović P. A. i Aksentijević, D.: The Influence of Important Macroeconomic Factors on Tariff Trends and The Shipowners Business in Coastal Liner Passenger Transport in The Republic of Croatia. U: Naše more 2021 Conference Proceedings / Mišković, Darijo - Dubrovnik : University of Dubrovnik, Maritime Department, 2021.
2. Jugović, A., Šutalo, V. i Aksentijević, D.: Comparative analysis of tariff models in RO-RO transport in Croatia, Italy and Greece. U: Mišković, D. (ur.) Naše more 2021 Conference Proceedings, Dubrovnik : University of Dubrovnik, Maritime Department, 2021.
3. Gračan, D., Jugović, A., Aksentijević, D., Gračan, L. i Barkidija Sotošek, M.: Analysis and trends of maritime passenger traffic in European Union. U: Economic and Social Development 88th International Scientific Conference on Economic and Social Development – "Roadmap to NetZero Economies and Businesses" Book of Proceedings, 2022.
4. Jugović, A., Aksentijević, D. i Zaninović, P.A.: The impact of economic policy on shipper businesses in coastal line maritime passenger transport in Croatia. Pomorstvo, 35 (1), 87-92., <https://doi.org/10.31217/p.35.1.9>, 2021.
5. Jugović, A.: Perspectives of cruise tourism in the City of Rijeka. Pomorstvo, 34 (2), 252-260., 2020.
6. Jugović, A. THEORETICAL MODEL OF DESTINATION DEVELOPMENT FOR CRUISING TOURISM IN THE ADRIATIC REGION. Ekonomska misao i praksa, 29 (1), 205-226., 2020.
7. Stopford, M.: Maritime Economics, Routledge, London & New York, 2000.
8. Mrnjavac, E.: Promet u turizmu, Fakultet za turistički i hotelski menadžment, Opatija, 2002.
9. Wayne K. Talley: Port Economics, Routledge – Taylor and Francis Group, London and New York, 2009. (i novija).

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Kesić, B., Jugović, A.: Menadžment pomorskoputničkih luka, Sveučilište u Rijeci Pomorski fakultet Rijeka & Liber d.o.o., Rijeka, 2006. – dostupno i online	30	50
Peručić, D.: Cruising-turizam – razvoj, strategije i ključni nositelji, Sveučilište u Dubrovniku, Dubrovnik, 2013.	10	50

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies in Rijeka.



### 3.2. Course description

Generic information			
Head of Course	Borna Debelić, PhD		
Course	Public Management and Governance		
Study Programme	Logistic and Management in Maritime Industry and Transport		
Type of Course	Elective		
Year of Study	1.		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload		4
	Number of Hours (L+E+S)		30 + 0 + 15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Acquiring knowledge in a specific area of public management is essential for persons responsible for the successful operations of economic entities in the public and private sectors.

##### 1.2. Prerequisites for Course Registration

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##### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Interpret and interpret basic concepts within public sector economics.
2. Typify and interpret basic economic types (categories) of goods and criteria for classification, and describe allocation mechanisms and their characteristics depending on the types of goods.
3. Classify the role of public authorities in economic flows, and describe and correctly interpret public authorities' actions in the context of making allocation decisions.
4. Argue the importance and impact of management in the public sector with regard to the economic and non-economic effects that arise through its activities.
5. Categorize the basic components of domestic product and the impact of the public sector on macroeconomic flows through the system of public finances and public policies.
6. Identify the postulates and significance of public choice theory and game theory.
7. Examine new tendencies in the management of common and public goods, and critically consider possibilities for further improvements.

##### 1.4. Course Outline





The role of the public sector and the role of public authorities in economic flows. Economic reasons for the existence of the public sector. Public choice theory. The influence of public choice theory and complementary theories on the development of the modern public sector. Typification of goods and classification criteria. Features and peculiarities of management in the public sector. Characteristics of private goods, public goods and common goods. Fundamental differences between types of goods. Allocative specificities of public and common goods, and significant differences in the allocation of public and common goods. Features of collective decision-making and the problem of aggregating preferences. Game theory and collective action. Deliberation and the public sector. Pluralism, participation and service provision. Policy and practice of budgeting and public expenditures. Public sector performance. Public sector limitations and self-regulatory governance.

1.5. Modes of Instruction

☒ Lectures

☒ Seminars and workshops

☐ Exercises

☐ E-learning

☐ Field work

☒ Practical work

☒ Multimedia and Network

☐ Laboratory

☒ Mentorship

☐ Other \_\_\_\_\_

1.6. Comments

1.7. Student Obligations

Regular attendance at classes and completion of homework assignments.

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam	0,5	Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Discussion in class (10% of learning outcomes) in which students analyze the role and significance of the public sector in contemporary economic systems and interpret public choice theory in the context of game theory and goods theory (I1 – I7) from the aspect of fundamental decision-making mechanisms in the public sector.

Written continuous knowledge assessment (2 colloquiums, each worth 25% of learning outcomes, which is a total of 50% of learning outcomes and a minimum of 50% of the points achieved per colloquium) in which the student demonstrates understanding of theoretical concepts and practical implications of categorization and types of goods and corresponding allocation mechanisms (I1 – I7), the principles of their operation and the effects on the decision-making system in the public sector.

Preparation and defense of a seminar paper (10% of learning outcomes) in which the student demonstrates understanding of the specifics of the functioning of the public sector (I1-I7).

Final written test (30% of learning outcomes and minimum 50% of achieved points) in which the student demonstrates understanding of public choice theory, goods theory and game theory and their practical implications for decision-making mechanisms in the public sector (I1 - I7).

### 1.10. Main Reading

1. Teaching materials on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Ostrom, E.: Upravljanje zajedničkim dobrima: Evolucija institucija za kolektivno djelovanje, Naklada Jesenski i Turk, Zagreb, 2006.
3. McLean, I., (1997). Uvod u javni izbor. Zagreb: Fakultet političkih znanosti.
4. North, D. C.: Institucije, institucionalna promjena i ekonomska uspješnost, Masmedia, Zagreb, 2003.

### 1.11. Recommended Reading

1. Elster, J.: Uvod u društvene znanosti, Naklada Jesenski i Turk, Hrvatsko sociološko društvo, Zagreb, 2000.
2. Bailey, S. J.: Public Sector Economics: Theory, Policy and Practice, 2nd edition, Palgrave, 2002.
3. Geckil, I. K., Anderson, P. L.: Applied Game Theory and Strategic Behavior, Taylor & Francis Group, Boca Raton, 2010.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Ostrom, E.: Upravljanje zajedničkim dobrima: Evolucija institucija za kolektivno djelovanje, Naklada Jesenski i Turk, Zagreb, 2006.	20	75
McLean, I., (1997). Uvod u javni izbor. Zagreb: Fakultet političkih znanosti.	10	
North, D. C.: Institucije, institucionalna promjena i ekonomska uspješnost, Masmedia, Zagreb, 2003.	10	

### 1.13. Quality Assurance

The quality of studying is continuously monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies, University of Rijeka. An analysis of exam taking is prepared annually, and a survey among students is conducted every semester.



### 3.2. Course description

Generic information		
Head of Course	Svjetlana Hess, PhD	
Course	Technological Processes in Transport	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+15+0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The primary objective of the course is to equip students with the ability to manage technological processes in transport by mastering the terminology, defining operational parameters, performing analytical calculations, and evaluating capacity utilization. This will lead to the acquisition of practical, applicable knowledge and skills as a foundation for planning and efficient organization of technological processes.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Identify the basic phases of a selected technological process
2. State the operational indicators of transport vehicles in a specific transport mode
3. Explain the efficiency indicators of transport vehicles and the method of expressing the utilization of transport, transshipment, and infra-/superstructure capacities
4. Interpret the cargo distribution diagram for a given vehicle and calculate the axle load
5. Calculate transport output, distance, time, speed, static and dynamic load, and/or work shift norms, capacity, and time utilization for given examples
6. Present key efficiency indicators for a specific technological process in transport

##### 1.4. Course Outline

Operational indicators of freight vehicles. Technical regulations and vehicle maintenance. Transport output, capacity utilization. Cargo distribution on a transport vehicle and axle load calculation. Planning development and utilization of port capacities, types and number of means. Standardization of port technological processes. Technological processes in rail transport. Wagon operation indicators by capacity and time. Technical capacity of railway lines. Freight air transport, means of transportation. KPIs. Congestion measurement and monitoring: mobility and reliability measures. Analytical calculations.

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work         |
| <input type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises   | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning             | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____                       |

##### 1.6. Comments



1.7. Student Obligations

Student responsibilities include: attending at least 70% of classes, two mid-term tests, a seminar paper, and a final exam.

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1.5	Class participation		Seminar paper	0.5	Experiment	
Written exam	1.0	Oral exam		Essay		Research	
Project		Continuous Assessment	2.0	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

#### Evaluation Procedure:

During the course, students may earn up to 70% of the total grade points via two mid-term tests and a seminar paper (learning outcomes: 1–6), and 30% from the final exam (learning outcomes: 1, 2, 3, and 6). The final exam evaluates comprehensive theoretical knowledge and understanding of specific knowledge in transport and logistics technological processes. A minimum of 35% of total points is required to take the final exam, and at least 50% is needed to pass it.

#### Examples of Evaluation by Learning Outcome:

1. Identify the basic phases of a selected technological process
2. State the operational indicators of transport vehicles in a selected transport mode
3. Explain the efficiency indicators of transport vehicles and the method of expressing the utilization of transport, transshipment, and infra-/superstructure capacities
4. Interpret the cargo distribution diagram for a given transport vehicle and calculate axle load
5. Calculate transport output, distance, time, speed, static and dynamic load, and/or work shift norms, capacity, and working time utilization for a given example
6. Present key efficiency indicators for a specific technological process in transport

### 1.10. Main Reading

Course materials available on the e-learning platform – Merlin (<https://moodle.srce.hr>)

### 1.11. Recommended Reading

1. Babeli, K., Hess, S., Hess, M., Capacity utilization of the container terminal as multiphase service system. European Transport \ Trasporti Europei, Issue 86, Paper n° 4, 2022.
2. Krljan, T., Grbčić, A., Hess, S., Grubišić, N., The Stochastic Frontier Model for Technical Efficiency Estimation of Interconnected Container Terminals, JMSE, 9(5): 1-20, 2021.
3. Baričević, H., Tehnologija kopnenog prometa, Pomorski fakultet u Rijeci, Rijeka, 2001.
4. Dundović, Č., Tehnološki procesi u prometu, Sveučilište u Rijeci, Odjel za pomorstvo, Rijeka, 2001.
5. Radačić, Ž., Suić, I., Škurla Babić, R., Tehnologija zračnog prometa I, Fakultet prometnih znanosti, Zagreb, 2008.
6. Pravilnik o tehničkim uvjetima vozila u prometu na cestama (Narodne novine 85/16, 16/20)

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Course materials on e-learning platform – Merlin	web	10

### 1.13. Quality Assurance

The quality of education is monitored in accordance with the ISO 9001 system and aligned with European standards and guidelines for quality assurance, implemented at the Faculty of Maritime Studies in Rijeka. Exam pass rate analysis is conducted annually, and student surveys are carried out once per semester.



### 3.2. Course description

Generic information		
Head of Course	Mirano Hess, PhD	
Course	Coastal Zone Management	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	45 + 0 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

To equip students with the understanding of coastal zone management elements, recognizing tasks and challenges, planning, implementation, monitoring, and evaluation within international and national development frameworks, in accordance with modern technological solutions and the latest recommendations and regulations in the field.

##### 1.2. Prerequisites for Course Registration

/

##### 1.3. Expected Learning Outcomes

After completing the course, students will be able to:

1. Compare the characteristics of coastal zones in Croatia and worldwide.
2. Assess the importance and elements of sustainable coastal zone development in Croatia and globally.
3. Evaluate key challenges in coastal zone management processes in Croatia and identify recommendations.
4. Identify and highlight similarities and differences between key national and European documents, and describe Croatia's institutional framework.
5. Recognize the phases of coastal zone management and interpret the use of GIS for maritime assets.

##### 1.4. Course Outline



1. Instruments for integrated coastal zone management.
2. Key characteristics of coastal zones in Croatia.
3. Importance of sustainable coastal zone development in Croatia and globally.
4. Integrated coastal zone management in Croatia and worldwide.
5. Determinants of sustainable development and spatial planning.
6. Coastal zones in international and national development frameworks.
7. European documents for integrated coastal zone management and spatial planning, and their application in Croatia's spatial planning system.
8. Protocol on Integrated Coastal Zone Management.
9. Coastal zone management—institutional framework in Croatia.
10. Coordination and stakeholders in coastal zone management policies.
11. Analysis of planning solutions and processes in relation to integrated coastal zone management.
12. Maritime assets in Croatia's legal framework.
13. Valuation of maritime assets.
14. GIS for maritime assets as a support system for integrated management.
15. Planned development of the Adriatic region.

<b>1.5. Modes of Instruction</b>	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
<b>1.6. Comments</b>							
<b>1.7. Student Obligations</b>							
Attendance in classes. Passing an in-course colloquium and a final exam.							
<b>1.8. Assessment<sup>1</sup> of Learning Outcomes</b>							
Course attendance	1.5	Class participation		Seminar paper		Experiment	
Written exam	1.1	Oral exam		Essay		Research	
Project		Continuous Assessment	2.4	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in-class assessment and 30% final exam (according to the University of Rijeka Study Regulations and the Faculty of Maritime Studies of Rijeka Study Regulations). Continuous assessment: colloquium on course material, minimum 50% of grade points required (I1, I2, I3). Final exam: written exam on course material, minimum 50% of grade points required (I4, I5).

Examples of Learning Outcome Assessments:

1. Compare EU principles for coastal zone management. (I1)
2. Evaluate three concepts underlying the philosophy of sustainable coastal zone development. (I2)
3. Identify significant challenges and explain the consequences of spatial planning issues in coastal zones. (I3)
4. Besides administrative bodies in counties, which other institutions are important for coastal zone management in Croatia, and highlight similarities in their functions. (I4)
5. Explain why and how GIS for maritime assets is used. (I5)

#### 1.10. Main Reading

1. Hess, M.: Upravljanje obalnim područjem, 2025, na Merlinu (<https://moodle.srce.hr>).

#### 1.11. Recommended Reading

1. John R. Clark, Coastal Zone Management Handbook, CRC Press, 2019.
2. Frank Ahlhorn, Integrated Coastal Zone Management: Status, Challenges and Prospects, Springer Vieweg, 2018.
3. Kovačić, M., Komadina, P.: Upravljanje obalnim područjem i održivi razvoj, Pomorski fakultet u Rijeci, 2011.
4. David R. Green, Coastal Zone Management, Thomas Telford Publishing, 2009.
5. Protokol o integriranom upravljanju obalnim područjima sredozemlja, UNEP/MAP, 2008.
6. Prijedlog direktive o pomorskom prostornom planiranju i integriranom upravljanju obalnim područjem, 2013.
7. Marinović-Uzelac, A., Prostorno planiranje, Dom i svijet, Zagreb, 2021.
8. Schultz-Zehden, A., Gee, K., Scibior, K., HANDBOOK on Integrated Maritime Spatial Planning from the INTERREG III B CADSES PlanCoast Project, Berlin, 2022.
9. Jovanović, Filip ; Hess, Mirano: Reducing the catastrophe risk in coastal areas: risk management at fsru terminals // High technologies. Business. Society. Sofija: Scientific technical union of mechanical engineering Industry - 4.0, 2021.
10. Grbić, Luka ; Hess, Mirano: Tanker inspection regime in correlation with maritime accident risks and management decisions // High technologies. Business. Society. Sofija: Scientific technical union of mechanical engineering Industry - 4.0, 2021.

#### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Hess, M.: Upravljanje obalnim područjem, 2025, na Merlinu ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> ).	Unlimited	25

#### 1.13. Quality Assurance





*Sveučilište u Rijeci • University of Rijeka*

Trg braće Mažuranića 10 • 51 000 Rijeka • Croatia

T: (051) 406-500 • F: (051) 216-671; 216-091

W: [www.uniri.hr](http://www.uniri.hr) • E: [ured@uniri.hr](mailto:ured@uniri.hr)

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies University of Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted.



### 3.2. Course description

Generic information		
Head of Course	Lovro Maglić, Ph.D.	
Course	Marine technologies	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30+0+15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to familiarize students with the basic characteristics, regulations and regularities of numerous activities in the field of exploration and exploitation of the sea and underwater (except maritime transport), which are based on modern technological solutions or are a consequence of technological development.

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

After learning, the student will be able to:

1. Distinguish between rights and obligations in the exploitation of the sea in the area of jurisdiction of coastal states and in international waters in accordance with the UN Convention on the Law of the Sea.
2. Explain technical and technological terms and distinguish methods of fishing and mariculture.
3. Interpret the methods of exploration and exploitation of hydrocarbons and ores from the seabed.
4. Interpret the conditions and efficiency of methods of using seawater and energy from the sea.
5. Analyze technologies and methods in the maritime industry related to the towing of objects, rescue of property at sea, shipbuilding and nautical tourism.
6. Explain technological concepts and underwater activities of divers and modern systems such as remotely operated and autonomous underwater vehicles.

##### 1.4. Course Outline

The concept of marine technologies in general. The right to exploit the sea and the seabed. Marine fisheries and mariculture. Exploration and exploitation of hydrocarbons. Offshore mining and dredging. Harnessing the energy of the sea. Seawater treatment. Towing and salvage at sea. Nautical tourism. Shipbuilding. Underwater activities – divers and autonomous and remotely operated underwater vehicles.

##### 1.5. Modes of Instruction

- ☒ Lectures
- ☒ Seminars and workshops
- ☐ Exercises
- ☐ E-learning
- ☐ Field work

- ☒ Practical work
- ☐ Multimedia and Network
- ☐ Laboratory
- ☒ Mentorship
- ☐ Other \_\_\_\_\_



1.6. Comments		None					
1.7. Student Obligations							
<ul style="list-style-type: none"><li>- Attendance at classes</li><li>- Conducting research and presenting the project assignment</li><li>- Final Oral Exam</li></ul>							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper	1	Experiment	
Written exam		Oral exam	2,5	Essay		Research	1
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
Outcome evaluation procedure: <ul style="list-style-type: none"><li>- Presentation of the project assignment and research results: 50% of grade points</li><li>- Final oral exam (all outcomes): 50% of the grade points.</li></ul>							
Examples of assessment of learning outcomes: <ul style="list-style-type: none"><li>- Describe the rights and obligations of the coastal State when exploiting resources in the economic zone (1)</li><li>- Explain pelagic fishing technologies (2)</li><li>- Describe the principle of hydrocarbon exploration by seismic ships (3)</li><li>- Compare the features of different types of hydrocarbon exploration platforms (3)</li><li>- List and explain the principles of harnessing wave energy (4)</li><li>- Judge which principle of using marine energy is applicable in the Adriatic Sea (4)</li><li>- Explain the rights and obligations of anchorage users in nautical tourism in accordance with the regulations of the Republic of Croatia (5)</li><li>- Compare the features of the different classes of ROV (6).</li></ul>							
1.10. Main Reading							
Teaching material available on the e-learning system - Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )							
1.11. Recommended Reading							
Selected entries of the Maritime Encyclopedia and a selection of articles and studies available on the Merlin e-learning system.							
1.12. Number of Main Reading Examples							
Title				Number of examples		Number of students	
Teaching material available on the e-learning system - Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )				Unlimited			
1.13. Quality Assurance							
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the failure to pass are analysed and appropriate measures are adopted.							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 3.2. Course description

Generic information			
Head of Course	Neven Grubišić, PhD		
Course	Methodology of Transportation Planning and Modelling		
Study Programme	Logistic and Management in Maritime Industry and Transport		
Type of Course	Elective		
Year of Study	1.		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload		5
	Number of Hours (L+E+S)		30+0+15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

To gain knowledge about the methods in transportation planning and modelling, to develop skills in transport modelling, simulation techniques and analytic tools.

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

Upon completing the course, the student will be able to:

1. Construct objects within a transportation network, define their connections and attributes, and integrate new and existing elements into a transportation model using computer software.
2. Evaluate the effects of constructing an alternative transport route by applying methods for monetizing travel time (VOT) and determining vehicle operating costs (VOC).
3. Generate individual groups, activities, and strata of transport demand, as well as structural parameters for trip production and attraction by zones.
4. Calculate the spatial distribution of trips between zones by demand segments and transport modes.
5. Determine estimated traffic loads based on the assignment of transport demand to individual roads under static and dynamic conditions, using a digital traffic model.
6. Create procedures for launching a computer-simulated traffic model.
7. Analyze the accessibility of transport services based on isochrone analysis.
8. Present the results of the developed digital traffic model using a computer simulation tool.

##### 1.4. Course Outline



Concepts of traffic decision-making and planning. Methodology and planning process at the transport network level. Types of plans. Objectives, measures, and traffic performance indicators. Impacts of transport on mobility and the environment. Traffic analytics techniques. Graphical representation of movement in space and time. Elements of the transport network and traffic model. Travel time and generalized travel cost. Vehicle operating costs. Traffic modeling and the role of the traffic model in transport planning at the macro, meso, and micro levels. Process of developing a traffic model. Transport systems, modes, and demand segments. Demographic characteristics and demand strata. Trip production and attraction. Travel demand modeling: trip generation, distribution, and modal split. Gravity model. Logit model. Trip assignment to the transport network: Wardrop's equilibrium principles. Public transport planning: types of public transport services and accessibility indicators. Freight transport modeling methods. Regional transport planning. Negative impacts of transport and analytical methods for their assessment. Construction of a traffic model using computer simulation tools, management of attributes, procedures, and reports. Analysis of results and evaluation of planned and initial scenario states.

1.5. Modes of Instruction

☒ Lectures

☒ Seminars and workshops

☐ Exercises

☒ E-learning

☐ Field work

☐ Practical work

☒ Multimedia and Network

☐ Laboratory

☐ Mentorship

☐ Other \_\_\_\_\_

1.6. Comments

Lectures and seminars are conducted in a specialized classroom equipped with computer tools for transport modeling and simulation.

1.7. Student Obligations

Students are required to regularly attend classes and actively participate in collaborative forms of instruction, as well as complete a programming assignment on a computer. A minimum number of course credits, in accordance with the Study Regulations, is a prerequisite for taking the final exam.

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam	0,5	Oral exam	0,5	Essay		Research	0,5
Project	2	Continuous Assessment		Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation of achieved learning outcomes is conducted in accordance with the Regulations on Study Programs of the University of Rijeka and the Study Regulations of the Faculty of Maritime Studies in Rijeka as follows:

#### *Project/Programming Assignment:*

Component A: Development of a private and public transport network model – 30 points, learning outcomes 1–3

Component B: Development of a transport demand model – 30 points, learning outcomes 4–7

Project Assignment Defense: 10 points, learning outcomes 1–8

The project assignment must be completed and defended with at least 70% success (a prerequisite for taking the final exam). The project consists of two components, each evaluated separately.

Defense of the project is mandatory and is graded based on the understanding of practical work and skills in using the software tool.

The final exam assesses 30% of the acquired learning outcomes, with students required to achieve at least 50% success to pass. A maximum of 70 points (70% of the grade) can be earned through coursework (lectures and seminars), and a maximum of 30 points (30% of the grade) on the final exam.

Examples of evaluation by individual learning outcomes:

1. Using an OpenStreetMap base, create nodes, links, zones, and connectors for the designated area; set attributes, geometry, and permitted directions of movement on key network elements for selected transport systems. (LO1)
2. Calculate the benefits of constructing a city bypass for an individual transport infrastructure user, as well as the total benefits of the project for all users, based on given values before and after project implementation. (LO2)
3. Propose structural parameters for calculating trip production and attraction by zones for the “HW-Emp” and “HE-Stu” demand strata. (LO3)
4. Distribute generated trips by origin-destination zones using the gravity method, and perform balancing with a constraint on the production side. (LO4)
5. Explain Wardrop’s user equilibrium principle in static and dynamic conditions with reference to traffic load distribution results along routes. (LO5)
6. In the simulation software, create a procedure for demand assignment along routes between selected origin and destination zone pairs, and compare results and skim matrix values. (LO6)
7. Graphically present isochrones in the transport model and evaluate the availability of public transport lines in the selected area based on the obtained values. (LO7)
8. Interpret the results obtained from the developed transport model related to the distribution of traffic loads by routes, modal split of trips, and skim matrix values. (LO8)

### 1.10. Main Reading

1. Teodorović, D., Janić, M.: Transportation Engineering: Theory, Practice and Modeling, 2nd edition, BH, 2022.
2. PTV Visum Fundamentals, PTV Planung Transport Verkehr AG, Karlsruhe, 2012.
3. Grubišić, N.: Metodologija prometnog planiranja – recenzirani nastavni materijali, Sveučilište u Rijeci, Pomorski fakultet, 2023.

### 1.11. Recommended Reading

Oruzar, D. de J., Willumsen, L. G.: Modelling Transport, 4th ed., John Wiley & Sons, Ltd, Chichester, 2011.

### 1.12. Number of Main Reading Examples



<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Teodorović, D., Janić, M.: Transportation Engineering: Theory, Practice and Modeling, 2nd edition, BH, 2022.	4	30
PTV Visum Fundamentals, PTV Planung Transport Verkehr AG, Karlsruhe, 2012.	Available online	30
Grubišić, N.: Metodologija prometnog planiranja – recenzirani nastavni materijali, Sveučilište u Rijeci, Pomorski fakultet, 2023.	Available online	30
<b>1.13. Quality Assurance</b>		
The quality is monitored in accordance with ISO 9001 standard carried out at the Faculty of Maritime Studies. The results of passed exams are analyzed once a year and proper measures taken.		



### 3.2. Course description

Generic information		
Head of Course	Dario Ogrizović, PhD	
Course	Big Data Analysis	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*Big data analysis includes structured, partially structured and unstructured data that are large and complex for processing and analysis in terms of scope, complexity, generation speed and different collection intervals.*

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

1. Explain the theoretical foundations of big data analysis.
2. Distinguish types of problems and categories of big data.
3. Indicate the sources and methods of data collection.
4. Application of big data analysis methodology.
5. Analyse and apply appropriate algorithms for processing data streams.
6. Design of a system for finding similar entities, frequent sets and groups in big data.
7. Compare storage systems and recommendation systems.
8. Critically assess privacy and ethics in big data analysis.

##### 1.4. Course Outline

Historical development and theoretical foundations of big data analysis. Types of problems and categories of big data. Sources and methods of data collection. Data processing and formatting. Big data analysis methodology. Analysis of flows and links in data. Finding similar entities, frequent sets and groups in big data. Recommendation systems. Data visualization. Storage systems. Map-reduce/Hadoop, GFS/HDFS, Bigtable/HBASE and Spark software tools. Big data analysis in maritime and transport. Multicore and manycore processing systems. Computer clusters and cloud computing for big data analysis. Privacy and ethics in big data analysis.

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network    |
| <input checked="" type="checkbox"/> Exercises   | <input checked="" type="checkbox"/> Laboratory     |
| <input checked="" type="checkbox"/> E-learning  | <input type="checkbox"/> Mentorship                |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____               |

##### 1.6. Comments





1.7. Student Obligations

1. Attendance and activity in class
2. Attendance and activity in laboratory exercises
3. Project
4. Written exam (midterms and exam)

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project	1	Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The process of evaluation of the acquired learning outcomes takes place during continuous assessments (through class activities (10%), preparation and presentation of a project (20%), 2 midterm exams - total 40%) and at the final part of the exam (30%). A minimum of 50% of points must be achieved in individual knowledge assessments.

Examples of evaluating learning outcomes in relation to the learning outcomes that are set are:

1. Explain the theoretical foundations of big data analysis.
2. Distinguish types of problems and categories of big data.
3. Indicate the sources and methods of data collection.
4. Application of big data analysis methodology.
5. Analyse and apply appropriate algorithms for processing data streams.
6. Design of a system for finding similar entities, frequent sets and groups in big data.
7. Compare storage systems and recommendation systems.
8. Critically assess privacy and ethics in big data analysis.

### 1.10. Main Reading

1. Obembe, F., Engel, O. 2024. A Hands-on Introduction to Big Data Analytics, SAGE Publications
2. Kelleher, J.D., Tierney, B. 2021. Znanost o podacima, MIT Press, Mate d.o.o.
3. Leskovec, J., Rajaraman, A., Ullman, J. D. 2014. Mining of Massive Datasets, Cambridge University Press.
4. Study materials available at e-learning platform (<https://moodle.srce.hr>)

### 1.11. Recommended Reading

1. Buyya, R., Calheiros, R. N., Dastjerdi, A. V. 2016. *Big Data: Principles and Paradigms*, Elsevier.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Obembe, F., Engel, O. 2024. A Hands-on Introduction to Big Data Analytics, SAGE Publications	3	40
Leskovec, J., Rajaraman, A., Ullman, J. D. 2014. <i>Mining of Massive Datasets</i> , Cambridge University Press.	5	40

### 1.13. Quality Assurance

The quality of study is constantly monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An analysis of the exams is made annually and a student survey is conducted once a semester. All data, including exam, written work and assessment, are at all times public data for all students who have enrolled in the course (on the e-learning platform).



### 3.2. Course description

Generic information		
Head of Course	Dario Ogrizović, PhD	
Course	Virtual and augmented reality	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*Introduction to the basic theoretical and practical principles of virtual, augmented, mixed and extended reality.*

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

1. Critically analyse the concepts of virtual, augmented, mixed, and extended reality.
2. Explain sensation, perception, movement, interaction, and immersion.
3. Define and analyse a virtual interactive environment.
4. Model an interactive virtual environment.
5. Define and analyse the features of an augmented reality system.
6. List and compare types of devices for virtual and augmented reality.
7. Apply software tools for creating virtual environments.
8. Create virtual and augmented reality in business and manufacturing systems.

##### 1.4. Course Outline

Theoretical foundations of virtual reality (VR), augmented reality (AR), mixed reality (MR) and extended reality (XR). Historical development. Sensation, perception, movement, interaction and immersion. Virtual interactive environment (virtual scene and components). Modelling of interactive virtual environment (graphic and programmable flow systems, rendering, polygonal structures and special rendering effects). Features of augmented reality systems (optical and video image mixing, alignment, tracking and mobility). General purpose graphics accelerators. Types of devices for virtual and augmented reality. Visual, audio, haptic and other input and output devices. Programming tools Unreal, Unity, Godot, VRTK, OpenGL, WebGL, Oculus SDK, HTC Vive SDK, AWS Sumerian and Google AR Core. Application of virtual and augmented reality in business and manufacturing systems and in maritime and transport.

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network    |
| <input checked="" type="checkbox"/> Exercises   | <input checked="" type="checkbox"/> Laboratory     |
| <input checked="" type="checkbox"/> E-learning  | <input type="checkbox"/> Mentorship                |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____               |



1.6. Comments

1.7. Student Obligations

1. Attendance and activity in class
2. Attendance and activity in laboratory exercises
3. Project
4. Written exam (midterms and exam)

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project	1	Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The process of evaluation of the acquired learning outcomes takes place during continuous assessments (through class activities (10%), preparation and presentation of a project (20%), 2 midterm exams - total 40%) and at the final part of the exam (30%). A minimum of 50% of points must be achieved in individual knowledge assessments.

Examples of evaluating learning outcomes in relation to the learning outcomes that are set are:

1. Critically analyse the concepts of virtual, augmented, mixed, and extended reality.
2. Explain sensation, perception, movement, interaction, and immersion.
3. Define and analyse a virtual interactive environment.
4. Model an interactive virtual environment.
5. Define and analyse the features of an augmented reality system.
6. List and compare types of devices for virtual and augmented reality.
7. Apply software tools for creating virtual environments.
8. Create virtual and augmented reality in business and manufacturing systems.

#### 1.10. Main Reading

1. LaValle, S. M. 2023. Virtual Reality, Cambridge University Press.
2. Study materials available at e-learning platform (<https://moodle.srce.hr>)

#### 1.11. Recommended Reading

1. Greengard, S. 2019. Virtual Reality, MIT Press.

#### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
LaValle, S. M. 2023. Virtual Reality, Cambridge University Press.	3	40
Study materials available at e-learning platform ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )		

#### 1.13. Quality Assurance

The quality of study is constantly monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An analysis of the exams is made annually and a student survey is conducted once a semester. All data, including exam, written work and assessment, are at all times public data for all students who have enrolled in the course (on the e-learning platform).



### 3.2. Course description

Generic information		
Head of Course	Dražen Žgaljić, PhD	
Course	Multimodal transport and Motorways of the Sea	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 0 + 10

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Familiarizing students with various multimodal transport technologies, the technologies and organization of short sea shipping connections and maritime transport routes (Motorways of the Sea), legal and market conditions, and their environmental contributions.

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

After completing and passing the course, the student will be able to:

- ☐ Compare different methods and technologies for cargo and passenger transport in multimodal transportation
- ☐ Distinguish between management models for short sea shipping and maritime transport routes (Motorways of the Sea)
- ☐ Design various approaches to organizing the transport of goods and passengers in multimodal systems
- ☐ Explain internal and external factors influencing the success of short sea shipping and maritime transport routes
- ☐ Summarize the European Union's legal regulations related to short sea shipping and maritime transport routes
- ☐ Identify the environmental and social impacts of short sea shipping and maritime transport routes

##### 1.4. Course Outline

Define, describe, and explain the elements of a multimodal transport system. Technical and technological characteristics of the intermodal transport system. Ownership of elements within the multimodal transport system. Development models of short sea shipping and maritime transport routes (Motorways of the Sea). Management models for short sea shipping and maritime transport routes. Criteria for evaluating the performance of specific elements of short sea shipping and maritime routes. Implementation of modern technologies/systems in the organization of short sea shipping and maritime transport routes. Public service in transport. Legal framework and efforts of the European Union in the functioning of short sea shipping and maritime transport routes. Market conditions for short sea shipping and maritime transport routes. Impact



and contribution of short sea shipping and maritime transport routes to society and the environment.

1.5. Modes of Instruction

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Lectures               | <input type="checkbox"/> Practical work                    |
| <input checked="" type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises                         | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning                        | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work                        | <input type="checkbox"/> Other _____                       |

1.6. Comments

1.7. Student Obligations

Student obligations include: regular class attendance, a seminar, midterm exams, and a final exam.

- ? 1st midterm exam – 25%
- ? 2nd midterm exam – 25%
- ? Seminar (individual assignment) – 20%
- ? Final exam – 30%

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,3	Class participation		Seminar paper	0,7	Experiment	
Written exam	1	Oral exam		Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation of acquired learning outcomes is carried out in accordance with the Regulations on Study Programs of the University of Rijeka and the Study Regulations of the Faculty of Maritime Studies in Rijeka, as follows:

- ? Continuous assessment during classes accounts for 50% of the learning outcomes: 25% through the 1st midterm exam and 25% through the 2nd midterm exam. The student must achieve at least 50% of the available points on each midterm exam in order to pass.
- ? The seminar paper accounts for 20% of the learning outcomes.
- ? The final exam accounts for 30% of the learning outcomes, and to pass the final exam, the student must achieve at least 50% of the available points.

Examples of learning outcome assessments in relation to the defined learning outcomes include:

1. Describe the different methods of cargo transport using multimodal transport.
2. Describe and compare different ways of organizing short sea shipping connections.
3. Describe modern technologies/systems in the organization of short sea shipping and maritime transport routes.
4. Describe the European Union's efforts to promote the development of short sea shipping.
5. Propose a solution to encourage the development of maritime transport routes at the regional or corridor level.
6. Compare the impact of road and maritime transport on society and the environment.

1.10. Main Reading



1. Bošnjak, I: Inteligentni transportni sustavi 1, Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb, 2006.
2. Zelenika, R.: Multimodalni prometni sustavi, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2006.
3. Zelenika, R.: Pravo multimodalnog prometa, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2006.
4. Study materials available at e-learning platform (<https://moodle.srce.hr>)

#### 1.11. Recommended Reading

- 1) Papadimitriou, S. et al.: Dynamics of Short Sea Shipping
- 2) Santos, T. A., Guedes Soares, C.: Short Sea Shipping in the Age of Sustainable Development and Information Technology
- 3) Papadimitriou, S. et al.: Motorways of the Sea' (MoS) and Related European Policies
- 4) Bukljaš Skočibušić, M., Radačić, Ž., Jurčević, M.: Ekonomika prometa, Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb, 2011.
- 5) Miloš, I.: Tehnologija i organizacija intermodalnog prometa, Sveučilište u Rijeci, 2011.
- 6) Ortuzar, J de D., Willumsen, L. G.: Modelling Transport, 4th Edition, John Wiley and Sons, 2011.
- 7) Uredbe i direktive Europske komisije i Parlamenta vezane uz međuočno prometno povezivanje i pomorske prometnice
- 8) Žgaljić, D., Tijan, E., Jugović, A., Poletan Jugović, T.: Implementation of sustainable Motorways of the Sea services - Multi-criteria analysis of Croatian port system // Sustainability, 11 (2019), 23; 6827, 21. doi: 10.3390/su11236827
- 9) Žgaljić, D., Oblak, R., Schiozzi, D.: Elaboration of Criteria for Development of Sustainable Motorways of the Sea Services // Pomorstvo : scientific journal of maritime research, 33 (2019), 2; 158-170. doi: 10.31217/p.33.2.5
- 10) Žgaljić, D., Perkušić, Z., Schiozzi, D.: Značenje multimodalnog, intermodalnog i kombiniranog prijevoza u razvoju pomorskih prometnica // Pomorski zbornik, 49-50 (2015), 265-278
- 11) Scientific and professional papers related to the topic of transport systems, Motorways of the Sea (MoS),

#### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Bošnjak, I: Inteligentni transportni sustavi 1, Fakultet prometnih znanosti Sveučilišta u Zagrebu, Zagreb, 2006.	6	50
Zelenika, R.: Multimodalni prometni sustavi, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2006.	2	50
Zelenika, R.: Pravo multimodalnog prometa, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2006.	6	50
Study materials available at e-learning platform ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	unlimited	

#### 1.13. Quality Assurance

The quality of studies is monitored in accordance with the ISO 9001 system and European standards and guidelines for quality assurance (ESG), which are implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rates are analyzed, and appropriate measures are taken.





### 3.2. Course description

Generic information		
Head of Course	Mladen Jardas, Ph.D.	
Course	Supply Chain Management	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30 + 30 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*The aim of this course is to provide a thorough understanding of an integrated approach to supply chain management. Through both theoretical and practical aspects, it will cover the identification and understanding of supply chain components, including supply systems, procurement, raw material handling, production, inventory management, ordering, and transportation. The interactions and dynamics among the components of the supply chain system will be analyzed, with a particular emphasis on process optimization and alignment. Additionally, methods and techniques for supply chain synthesis and analysis will be applied with the goal of improving the overall efficiency and sustainability of the system.*

##### 1.2. Prerequisites for Course Registration

-

##### 1.3. Expected Learning Outcomes

After learning, the student will be able to:

1. Interpret fundamental concepts of logistics and the supply chain.
2. Identify stakeholders in the overall supply process and explain their roles within the supply chain.
3. Analyze the importance of stakeholder integration and coordination in the supply chain and propose ways to improve business processes.
4. Apply statistical methods to forecast supply and demand within the supply chain.
5. Assess transportation and warehousing costs to ensure appropriate pricing of logistics services.
6. Evaluate procurement management and supplier selection, and make informed decisions regarding carrier selection based on the type of goods and specific requirements

##### 1.4. Course Outline

The course covers theoretical concepts and models related to the management of logistics processes, distribution, and costs within supply chains. Students will be introduced to the fundamentals of logistics, cost management objectives, Porter's models of competitive strategies, and theoretical models of supply chain management. Additionally, the course will explore the role of information technologies, transaction costs, and sustainability in modern supply chains, as well as strategic approaches to resource optimization and risk reduction.



1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
1.6. Comments							
1.7. Student Obligations							
<ol style="list-style-type: none"><li>1. Class attendance</li><li>2. Study, research, and problem-solving</li><li>3. Taking midterm exams and tests</li><li>4. Final exam</li></ol>							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam	1,5	Oral exam		Essay		Research	0,5
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation of achieved learning outcomes is carried out in accordance with the Regulations on Study Programs of the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies in Rijeka, as follows:

Through continuous assessment during the classes, 70% of the learning outcomes are evaluated:

1. 1st midterm exam: 30%
2. 2nd midterm exam: 25%
3. Presentation of a research assignment: 15%

Students may take the final exam if they have obtained 35 grade points in continuous knowledge assessments, i.e., 50% of the total number of points that could be achieved during classroom evaluation. Also, a condition is that students achieve at least 50% of points on each colloquium. The final exam is in written form and comprises 30% of the total grade. Students must satisfy 50% of the final exam in order to achieve a positive grade in the course.

Examples of learning outcome evaluation:

1. List business activities within the supply chain.
2. Which models are used for product delivery in the supply chain?
3. What are the decision-making levels and time horizons in the supply chain?
4. What are the basic reasons for system inertia in the supply chain?
5. Using the Excel computer program, predict supply and demand.
6. Describe the functioning of total quality management.

1.10. Main Reading

1. Teaching material available on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Prester J., Upravljanje lancima dobave, Zagreb: Sinergija nakladništvo, 2012.
3. Jacobs, F. Robert, Upravljanje operacijama i lancem opskrbe / F. Robert Jacobs, Richard B. Chase, 13. izd, Zagreb : Mate, cop. 2018
4. Bloomberg, LeMay, Hanna Logistika Mate 2006
5. Fawcet , Ellram, Ogden Supply chain Implementation Pearson 2007



1.11.

*Recommended Reading*

1. Ogrizović, Dario ; Perić Hadžić, Ana ; Jardas, Mladen, Fully Immersive Virtual Reality in Logistics Modelling and Simulation Education, *Promet*, 33 (2021), 6; 799-806. doi: 10.7307/ptt.v33i6.3941
2. Jardas, Mladen ; Dundović, Čedomir ; Gulić, Marko ; Ivanić, Katarina, The Role of Internet of Things on the, Development of Ports as a Holder in the Supply Chain, *Pomorski zbornik*, 54 (2018), 1; 61-73. doi: 10.18048/2018.54.05
3. Jardas, Mladen ; Dundović, Čedomir ; Tomić-Badurina, Paola, Supply chain - a key factor of the sustainable development of city centres, *Pomorstvo : scientific journal of maritime research*, 30 (2016), 1; 45-50. doi: 10.31217/p.30.1.6
4. G. Miscevic, E. Tijan, D. Žgaljić and M. Jardas, "Emerging trends in e-logistics," 2018 41st International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), Opatija, Croatia, 2018, pp. 1353-1358, doi: 10.23919/MIPRO.2018.8400244.
5. Hugos. M.: Essentials of Supply Chain Management. J.Willey and sons 2003
6. Chorafas D.: Integrating ERP, CRM, Supply chain management and smart materials – CRC Press LLC 2001

1.12.

*Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Teaching material available on the e-learning system – Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	unlimited	50
Bloomberg, LeMay, Hanna Logistika Mate 2006	5	50
Fawcet , Ellram, Ogden Supply chain Implementation Pearson, 2007	1	50
Prester J., Upravljanje lancima dobave, Zagreb: Sinergija nakladništvo, 2012	5	50
Jacobs, F. Robert, Upravljanje operacijama i lancem opskrbe / F. Robert Jacobs, Richard B. Chase, 13. izd, Zagreb : Mate, cop. 2018	7	50

1.13.

*Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the failure to pass are analysed and appropriate measures are adopted.



### 3.2. Course description

Generic information		
Head of Course	Ana Perić Hadžić, PhD Gorana Mudronja, PhD	
Course	Managerial Economics	
Study Programme	Logistics and Management in the Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30+15+0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of this course is to develop the necessary skills for students to apply economic models in business management within the broad maritime sector. The course enables students to apply economic theory (both microeconomics and macroeconomics) and decision-making methods in order to analyze how an organization can most efficiently achieve its goals or objectives. Additionally, the course aims to broaden students' understanding of the international dimension of business and decision-making in the context of globalization, liberalization, sustainable development, and smart specialization.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Determine the interdependence between managerial economics and other disciplines, and assess the influence of the broader socio-economic and political system on economic policies and current development trends.
2. Analyze the concept of sustainable (transport) development from the perspective of environmental, economic, and social sustainability.
3. Explain the impact of globalization and liberalization on the maritime market, particularly in the context of ports and shipping, supported by the analysis of concrete examples.
4. Interpret the concept of smart development and smart specialization and their influence on local and national economic development.
5. Identify the foundations of national economic development and compare different approaches to development among various countries.
6. Identify externalities in transport and explore strategies for addressing them as a societal cost.

##### 1.4. Course Outline



The Nature and Scope of Managerial Economics. The State and Public Choice. The Economic Role of the State. Sustainable Development (Economic Performance and Social Responsibility; Protection of Natural and Human Resources; Environmental, Economic, and Social Sustainability). Globalization (Inventors of Globalization; The New Migration; The Credit Crisis; Oil Dependence; The Impact of Globalization on Maritime Industry). Public-Private Partnership – Models and Trends in the Development of the Port Sector. Social Trends and Factors Influencing Mobility Behaviour (Social Drivers in Transport; Economic, Social, Demographic, and Cultural Challenges). Smart Specialization (Smart Specialization Strategy; Smart Development; Smart Cities; Smart Transport Infrastructure and Vehicles). Why Are Some Rich and Others Poor? (Wealth at the Bottom of the Economic Pyramid – Eradicating Poverty Through Profit; Income Distribution and the Fight Against Poverty; The Rise of Asian Economies – China, Japan, India; Financial Crisis – USA and Europe vs. German Manufacturing and Economic Policy). Neo(liberalism) (Origins, Concept, Economic Explanation; Positive and Negative Views on Neoliberalism – Where Next?). Externalities (Managing Externalities; Solutions and Who Pays?). Social Responsibility.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input checked="" type="checkbox"/> Multimedia and Network
	<input checked="" type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____
1.6. Comments		

### 1.7. Student Obligations

The student must attend at least 70% of lectures and exercises, pass the midterm exams (continuous knowledge assessment), and complete an individual assignment (essay) in order to be eligible to take the final exam.

### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	1,5	Seminar paper		Experiment	
Written exam		Oral exam	0,5	Essay	1,5	Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The final grade in this course is the sum of the percentage of success achieved during the course (70% of the final grade) and the percentage of success achieved in the final exam (30% of the final grade), in accordance with the Regulations on Studies at the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies, University of Rijeka.

- Continuous assessment: Midterm exams: Students must achieve a minimum of 50% of the total points in each midterm exam.
- Essay: Students are required to submit a written essay demonstrating the acquired knowledge and research on an assigned topic.
- Final exam: Students must achieve a minimum of 50% of the total points in the final exam in order to pass.

Examples of evaluating learning outcomes in relation to set learning outcomes:

1. Define the trends and concepts of modern economic development.
2. Define the concept of sustainable development and its pillars. Explain the expectations within the transport system.
3. Explain how the process of globalization has influenced the development of ports and shipping.
4. What is the smart specialization strategy, and what does it encompass?
5. Explain the foundations of the economic development model in the Nordic (Scandinavian) countries.
6. List the most common externalities in transport and describe the ways to address them.

### 1.10. Main Reading

1. Salvatore, Dominick: Ekonomija za menedžere u svjetskoj privredi, Zagreb: Mate, 1994.
2. Samuelson, Paul A. A.; Nordhaus, William D.: Ekonomija, Zagreb: Mate, 2011. (i ostala izdanja)
3. Course materials available on the e-learning platform Merlin (<https://moodle.srce.hr>).

### 1.11. Recommended Reading



1. Hirschey, Mark: Managerial Economics, South Western College Pub, 2005.
2. Thomas, Christopher R.; Maurice, Charles S.: Managerial Economics, McGraw – Hill / Irvin, 2010.
3. Landes, David S.: Bogatstvo i siromaštvo naroda: zašto su neki tako bogati, a neki tako siromašni?, Zagreb: Masmedia, 2003.
4. Prahalad, C. K.: Bogatstvo na dnu ekonomske piramide, Zagreb: Mate, 2010.
5. Letica, Bartol: Doba odgovornosti – Korporacijska društvena odgovornost u vrijeme svjetske financijske krize, Zagreb: Mate, 2011.
6. Kennedy, Robert E.; Sharma, Ajay: Premještanje usluga – iskorištavanje optimalne vangranične prilike, Zagreb: Mate, 2010.
7. Perić Hadžić, Ana: Evaluation of development partnership scenarios of the Croatian seaports using MAMCA analysis // Pomorstvo : scientific journal of maritime research, 36 (2022), 1; 135-146. doi: 10.31217/p.36.1.16
8. Perić Hadžić, Ana; Jugović, Alen; Perić, Marko: Criteria for the management partnership model in Croatian seaports // Ekonomska istraživanja, 28 (2015), 1; 226-242. doi: 10.1080/1331677X.2015.1041775
9. Perić Hadžić, Ana: Public-private partnership in Croatian seaports // Pomorstvo : scientific journal of maritime research, 26 (2012), 1; 113-137
10. Tijan, Edvard; Jović, Marija; Perić Hadžić, Ana: Achieving Blue Economy goals by implementing digital technologies in the maritime transport sector // Pomorstvo : scientific journal of maritime research, 35 (2021), 2; 241-247. doi: 10.31217/p.35.2.6
11. Perinić, Lea; Perić Hadžić, Ana; Kovačić, Mirjana; Santos, Norberto, The Role of Social Innovation in Green Cities Development // 42th International Conference on Organizational Science Development. Maribor: Univerza v Mariboru, 2023. str. 851-863. doi: 10.18690/um.fov.3.2023
12. Mudronja, G.; Jugović, A.; Škalamera-Alilović, D. (2020.) Seaports and Economic Growth: Panel Data Analysis of EU Port Regions, Journal of marine science and engineering, 8 (2020), 12; 1017
13. Mudronja, G.; Jugović, A.; Škalamera-Alilović, D. (2019.): Research and Development and Economic Growth: EU Port Regions, Zbornik radova Ekonomskog fakulteta u Rijeci : časopis za ekonomsku teoriju i praksu, Vol. 37, No. 2, str. 587-602., ISSN 1331-8004
14. Mudronja, G.; Aksentijević, D.; Jugović, A. (2022.). An overview of innovations and technology for sustainable development of seaports u F. X. Martinez de Osés, M. La Castellis i Sanabra (ur.). Proceedings of 9th International Conference on Maritime Transport (str. 1-15). Barcelona, Španjolska: Universidad Politecnica de Catalunya
15. Mudronja, G. (2020.). Inovacije i tehnološki napredak u poslovanju morskih luka i njihov utjecaj na gospodarstvo. u K. Skala (ur.) MIPRO 2020 43rd International Convention Proceedings, (str. 1737-1742), Opatija, Hrvatska: Croatian Society for Information, Communication and Electronic Technology – MIPRO.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Salvatore, Dominick: Ekonomija za menadžere u svjetskoj privredi, Zagreb: Mate, 1994.	3	50
Samuelson, Paul A. A.; Nordhaus, William D.: Ekonomija, Zagreb: Mate, 2011. (i ostala izdanja)	4	50
Course materials available on the e-learning platform Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	-	50

1.13. Quality Assurance

The quality of the study program is monitored in accordance with the ISO 9001 quality management system and in line with the European Standards and Guidelines for Quality Assurance, as implemented at the Faculty of Maritime Studies, University of Rijeka. Once a year, the passing results are analyzed and appropriate measures are adopted.





### 3.2. Course description

Generic information		
Head of Course	Ines Kolanović, PhD	
Course	Quality in maritime industry	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30 + 0 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of this course is to familiarize students with the factors and the concept of service quality, the quality assessment, and the quality assurance and management system in the maritime sector.

##### 1.2. Prerequisites for Course Registration

##### 1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Recognize the specificity of service quality in the maritime sector (subjects, objectives, etc.)
2. Analyze and connect theoretical determinants and the concept of service quality in the maritime sector.
3. Assess the importance of service quality in the maritime sector
4. Measure and evaluate service quality in the maritime sector
5. Recognize the importance of the institution responsible for clarifying the concepts, principles and objectives of Croatian standardization
6. Analyze the elements, principles and specificity of the quality management system in the maritime sector based on the PDCA approach
7. Critically assess the role and responsibility of the organization's management in the quality management system
8. Examine the possibilities of improving, innovating and evaluating the quality management system in the maritime sector

##### 1.4. Course Outline

Definitions of service quality and explanation of relevant terms. Overview of the historical development of service quality. Quality models. Importance and significance of quality in the development of service activities. Quality as a factor of competitiveness in the maritime services market. Measuring service quality in the maritime sector. Quality standardization. Principles of service quality management. Service quality management systems. Tools and methods of quality management. Responsibility of the organization's management for service quality. Resource management. Service provision process. Improving the service quality management system. Evaluation of the service quality management system. Quality costs. Quality control. Specificities of the service quality management system in the maritime sector.





<p>1.5. Modes of Instruction</p>	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
<p>1.6. Comments</p>							
<p>1.7. Student Obligations</p>							
<p>Students are required to: attend classes, pass two midterm exams (continuous knowledge assessment), complete a research assignment, and pass the final exam. Students must attend at least 70% of the total number of hours of lectures and seminars.</p>							
<p>1.8. Assessment<sup>1</sup> of Learning Outcomes</p>							
Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam	0,9	Oral exam		Essay		Research	0,3
Project		Continuous Assessment	1,8	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

#### Procedure:

- The final grade in the course is the sum of the points earned by the student during the course (70% of the grade) and the points earned on the final exam (30% of the grade), in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies in Rijeka.
- Continuous knowledge assessment:
  - Midterm Exam 1 – 30%; Learning outcomes: 1 to 5
  - Midterm Exam 2 – 30%; Learning outcomes: 6 to 8
  - Research assignment – 10%; Learning outcomes: 1 to 8
- Final exam – 30%; Learning outcomes: 1 to 8

A minimum of 50% of the points must be achieved on each midterm exam.

A minimum of 50% of the points must be achieved on the research assignment.

A minimum of 50% of the points must be achieved on the final exam.

#### Examples of learning outcome evaluation:

1. What are the specific characteristics of service quality compared to product quality? (LO1)
2. How would you explain the concept of port service quality? (LO2)
3. Highlight the importance of service quality from the perspective of customer satisfaction. (LO3)
4. Why is it important to measure the quality of port services? (LO4)
5. Which institutions represent the quality infrastructure in the Republic of Croatia? (LO5)
6. Using the example of port services, highlight the importance of the PDCA cycle. (LO6)
7. What is the role of management in the quality management system? (LO7)
8. Explain the quality system certification process with supporting arguments. (LO8)

### 1.10. Main Reading

1. Kolanović, Ines: Teaching material published on the e-learning platform (Merlin)
2. ISO standard 9001:2015

### 1.11. Recommended Reading

1. Žanić Mikuličić, Jelena; Kolanović, Ines; Jugović, Alen; Brnos, Dalibor: Evaluation of Service Quality in Passenger Transport with a Focus on Liner Maritime Passenger Transport - A Systematic Review // Sustainability, 16 (2024), 3; 1125, 15.
2. Agatić, Adrijana; Kolanović, Ines: Improving the seaport service quality by implementing digital technologies // Pomorstvo: scientific journal of maritime research, 34 (2020), 1; 93-101. doi: 10.31217/p.34.1.11
3. Kondić, Ž.: Kvaliteta i ISO 9000, Tiva, Varaždin, 2002.
4. Injac, N.: Mala enciklopedija kvalitete, Moderna povijest kvalitete, III. Dio, Oskar, Zagreb, 2001.
5. Skoko, H.: Upravljanje kvalitetom, Sinergija, 2000.
6. Juran, J.M., Gryna, F.M.: Planiranje i analiza kvalitete, Mate d.o.o. Zagreb, 1999.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Teaching materials on Merlin	unlimited	10
ISO standard 9001:2015	unlimited	10

### 1.13. Quality Assurance

The quality of studies is continuously monitored in accordance with the requirements of the ISO 9001 standard and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies in Rijeka. At the end of the semester, teachers and associates are evaluated by students, in accordance with the Manual for the Quality of Studies at the University of Rijeka.



*Sveučilište u Rijeci • University of Rijeka*

Trg braće Mažuranića 10 • 51 000 Rijeka • Croatia

T: (051) 406-500 • F: (051) 216-671; 216-091

W: [www.uniri.hr](http://www.uniri.hr) • E: [ured@uniri.hr](mailto:ured@uniri.hr)



### 3.2. Course description

Generic information			
Head of Course	Borna Debelić, PhD		
Course	Maritime Common Good Usage and Coastal Zone Economics		
Study Programme	Logistic and Management in Maritime Industry and Transport		
Type of Course	Elective		
Year of Study	1.		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4	
	Number of Hours (L+E+S)	30 + 0 + 0	

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Acquiring knowledge in the specific field of coastal zone management and maritime common good usage is essential for persons responsible for the successful operation of maritime economy entities.

##### 1.2. Prerequisites for Course Registration

/

##### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Describe and interpret basic concepts related to maritime common good and its use, or rather, usage, and typify and interpret the basic content components of maritime common good.
2. Understand the policy of open access to maritime common good, and analyse and structure property rights, as well as explain the role of public authorities and their bodies in allocation processes.
3. Understand and correctly interpret the significance of maritime common good as a resource important for the development of the maritime economy, and analyse the specifics of using maritime common good for the development of primary, secondary and tertiary sector activities.
4. Understand and correctly interpret public authority procedures in the context of making decisions on the purpose and use of maritime common good, then analyse and critically assess the specifics of the use/utilization of maritime common good in special-purpose ports in relation to ports open to public traffic, and understand the issues of agency relations in the processes.
5. Critically assess the basic components of the Barcelona Convention and the Protocol on Integrated Coastal Zone Management, and distinguish the specificities of the regulation of coastal zone and maritime common good issues by national legislation in relation to the Protocol on Integrated Coastal Zone Management from the aspect of the economics of maritime common good use.
6. Critically assess the mechanisms for allocating maritime common good, and their advantages and disadvantages with regard to the expected outcomes, and distinguish the role of all stakeholders in maritime common good and explain the specific roles and mechanisms of action of individual stakeholders.
7. Qualitatively evaluate the importance of long-term preservation of coastal zones and maritime common good in connection with allocation mechanisms and types of usage.

##### 1.4. Course Outline



Basic concepts related to maritime common good and its use/utilization. Basic content components of maritime common good. Open access policy to maritime common good. The role of public authorities and their bodies in the processes of allocation of maritime common good. Property rights in maritime common good. Maritime common good as a resource important for the development of the maritime economy. Specificities of the use of maritime common good for the development of primary, secondary and tertiary sector activities. Public authority in the context of decision-making on the purpose and use of maritime common good. Specificities of the use/utilization of maritime common good in special-purpose ports in relation to ports open to public traffic. Agency relationship in the processes of use of maritime common good. Barcelona Convention. Protocol on Integrated Coastal Zone Management. Regulation of coastal zone and maritime common good issues by national legislation in relation to the Protocol on Integrated Coastal Zone Management. Mechanisms for allocation of maritime common good. The role of maritime common good stakeholders and the mechanisms of their action. Long-term preservation of coastal zones and maritime common good.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work					
	<input type="checkbox"/> Seminars and workshops	<input checked="" type="checkbox"/> Multimedia and Network					
	<input type="checkbox"/> Exercises	<input checked="" type="checkbox"/> Laboratory					
	<input type="checkbox"/> E-learning	<input checked="" type="checkbox"/> Mentorship					
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____					
1.6. Comments							
1.7. Student Obligations							
Regular attendance at classes and completion of homework assignments.							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1	Class participation	1	Seminar paper		Experiment	0,5
Written exam	0,5	Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Discussion in class (10% of learning outcomes) in which students analyze the characteristics of coastal zone management (I1 – I7) from the aspect of contemporary theories and empirical research.

Written continuous knowledge assessment (2 colloquiums, each worth 30% of learning outcomes, which is a total of 60% of learning outcomes and a minimum of 50% of points achieved per colloquium) in which the student demonstrates an understanding of the economics of maritime common good use with an emphasis on economic theories and case studies that emphasize the importance of stakeholder participation in coastal zone management systems (I1 – I7).

Final written assessment (30% of learning outcomes and a minimum of 50% of points achieved) in which the student demonstrates an understanding of contemporary approaches to the economics of maritime common good and coastal zone management from the aspect of integrated management (I1 – I7).

### 1.10. Main Reading

1. Teaching materials on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Debelić, B.: Coastal Zone and Maritime Common Good Participatory Allocation, Pomorstvo: Scientific Journal of Maritime Research, 38 (2), 2024., p. 200-213.
3. Debelić, B.: Maritime Common Good and Coastal Zone Management, Pomorstvo: Scientific Journal of Maritime Research, 32 (1), 2018., p. 151-161.
4. Debelić, B.: Racionalizacija mehanizma alokacije pomorskog dobra Republike Hrvatske - izabrana poglavlja – autorizirana predavanja, Rijeka, 2013.
5. Ostrom, E.: Upravljanje zajedničkim dobrima: Evolucija institucija za kolektivno djelovanje, Naklada Jesenski i Turk, Zagreb, 2006.
6. Umbrella laws, conventions and protocols in the field of maritime common good and coastal zone (Law on Maritime Domain and Seaports, Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean - Barcelona Convention, Protocol on Integrated Coastal Zone Management)

### 1.11. Recommended Reading

1. Debelić, B.: Agency Theory and a Concession Relation in Ports Open to Public Traffic in the Function of Empowerment of Entrepreneurial Initiatives, Pomorstvo: Scientific Journal of Maritime Research, 27 (1), 2013., p. 225-246.
2. Bolanča, D. et al.: Pomorsko dobro, Inženjerski biro, Zagreb, 2005.
3. Vojković, G.: Pomorsko dobro i koncesije. Hrvatski hidrografski institut., Split, 2003.
4. Kesić, B., Ekonomika luka, Pomorski fakultet u Rijeci, Rijeka, 2003.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Vojković, G.: Pomorsko dobro i koncesije	10	75
Ostrom, E.: Upravljanje zajedničkim dobrima	10	
Bolanča, D. et al.: Pomorsko dobro	15	
Kesić, B., Ekonomika luka	25	

### 1.13. Quality Assurance

The quality of studying is continuously monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies, University of Rijeka. An analysis of exam taking is prepared annually, and a survey among students is conducted every semester.



### 3.2. Course description

Generic information		
Head of Course	Mladen Jardas, Ph.D.	
Course	Urban Logistics	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The objective of the Urban Logistics course is to develop students' abilities for critical judgment and analysis of the problems and challenges faced by urban logistics, with a particular focus on the urban environment and its dynamics. The course enables students to identify key stakeholders in urban centers, understand their interests in the context of delivery activities, and analyze specific problems arising from urbanization. Additionally, students will develop skills for critically evaluating various smart mobility solutions and analyzing their applicability in real-life urban settings.

##### 1.2. Prerequisites for Course Registration

-

##### 1.3. Expected Learning Outcomes

After learning, the student will be able to:

1. Critically evaluate the problems and challenges of urban logistics.
2. Identify stakeholders in the urban center and recognize their interests in the organization of delivery activities.
3. Analyze and identify urban logistics problems in relation to the urban environment.
4. Critically argue various smart mobility solutions and assess the potential level of their application in real-world settings.
5. Propose creative solutions for improving urban transport and logistics based on identified issues in the urban center.

##### 1.4. Course Outline

The course includes: the scope of urban logistics, differences and similarities between core logistics management and urban governance, stakeholder groups involved in urban logistics decision-making, analysis of urban logistics problems, and the urban distribution system.

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work         |
| <input type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises   | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning             | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____                       |

##### 1.6. Comments



### 1.7. Student Obligations

1. Class attendance
2. Study, research, and problem-solving
3. Taking midterm exams and tests
4. Final exam

### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	0,5
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation of achieved learning outcomes is carried out in accordance with the Regulations on Study Programs of the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies in Rijeka, as follows:

Through continuous assessment during the classes, 70% of the learning outcomes are evaluated:

1. 1st midterm exam: 30%
2. 2nd midterm exam: 25%
3. Presentation of a research assignment: 15%

Students may take the final exam if they have obtained 35 grade points in continuous knowledge assessments, i.e., 50% of the total number of points that could be achieved during classroom evaluation. Also, a condition is that students achieve at least 50% of points on each colloquium. The final exam is in written form and comprises 30% of the total grade. Students must satisfy 50% of the final exam in order to achieve a positive grade in the course.

Examples of learning outcome evaluation:

1. State the conceptual differences between supply chain management and urban logistics.
2. List the key stakeholders in the urban logistics system and explain their interests.
3. Why does last-mile delivery represent the biggest challenge in the organization of delivery activities?
4. How can the application of new technologies impact the organization of urban logistics?
5. What are the disadvantages of consolidation centers in the urban logistics system?

### 1.10. Main Reading

Teaching material available on the e-learning system – Merlin (<https://moodle.srce.hr>)

### 1.11. Recommended Reading





1. Jardas, M.; Perić Hadžić, A.; Ogrizović, D. Application of the MAMCA Method in the Evaluation of Delivery Flows within City Centers: A Case Study of Rijeka. *Urban Sci.* 2024, 8, 149. <https://doi.org/10.3390/urbansci8030149>
2. Jardas, M.; Perić Hadžić, A.; Tijan, E. Defining and Measuring the Relevance of Criteria for the Evaluation of the Inflow of Goods in City Centers. *Logistics* 2021, 5, 44. <https://doi.org/10.3390/logistics5030044>
3. Jardas, M., Krljan, T., Perić Hadžić, A. i Grubišić, N. (2020). Distribution center logistics optimization model – City of Rijeka case study. *Pomorstvo*, 34 (1), 185-194. <https://doi.org/10.31217/p.34.1.20>
4. T. Jukić, M. Smode Cvitanović, i M. Smokvina, "Visions of City Development in the warly 21st Century," *A Sch. J. Archit. Urban Plan.*, 2010.
5. K. Nowicka, "Smart City Logistics on Cloud Computing Model," *Procedia - Soc. Behav. Sci.*, vol. 151, no. February, pp. 266–281, 2014
6. Zanella, N. Bui, A. Castellani, L. Vangelista, and M. Zorzi, "Internet of things for smart cities," *IEEE Internet Things J.*, vol. 1, no. 1, pp. 22–32, 2014
7. E. Taniguchi and R. G. Thompson, "City Logistics 2: Modeling and Planning Initiatives." Wiley-ISTE, p. 402, 2018.

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Teaching material available on the e-learning system – Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	Unlimited	40

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the failure to pass are analysed and appropriate measures are adopted.



### 3.2. Course description

Generic information		
Head of Course	Saša Aksentijević, PhD Edvard Tijan, PhD	
Course	Business information systems	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+15+0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to provide students with fundamental knowledge of information systems and business applications, including their development, implementation, integration, and maintenance within a business environment. Students will acquire basic methodologies for information system development, enabling them to analyze business problems and propose solutions based on information system concepts.

Special emphasis is placed on training students to define the information needs of organizations and to select relevant information and communication technologies. Students will also gain basic skills in modeling IT solutions, as well as in applying fundamental concepts of cybersecurity in the development of business information systems, thereby creating the prerequisites for solving practical problems in business organizations.

The course exercises focus on the practical modeling of business processes and information infrastructure using the ARIS Express software tool.

##### 1.2. Prerequisites for Course Registration

Not required.

##### 1.3. Expected Learning Outcomes

Upon passing the exam, students will be able to:

1. Distinguish key terms and concepts of information systems and evaluate their role and interconnection within a business system.
2. Analyze business needs and requirements as a foundation for designing and developing information systems.
3. Identify fundamental risks and propose appropriate risk management methods throughout the information system lifecycle.
4. Apply principles and methods to ensure the security of business information systems.
5. Compare the functionalities and features of information systems used in maritime affairs and transport, and select the most suitable solutions for specific scenarios.
6. Model the components of an information system and their interdependencies using appropriate graphical models.
7. Create hierarchical (organizational) and process models using computer tools such as ARIS Express.



#### 1.4. Course Outline

1. Introduction to the course: course mission, literature, grading system, methods of knowledge assessment
2. Information systems: definition, structure, tasks, functions, characteristics, with emphasis on managerial information
3. The role and operation of information systems in business system management, vertical and horizontal levels, support methods, and data integration
4. Planning, analysis, design, development, implementation, and maintenance of business information systems
5. Databases
6. Risks in the development of business information systems
7. Information systems security
8. Business continuity management and disaster recovery
9. Enterprise Resource Planning (ERP) systems
10. Maritime Single Window
11. Data exchange systems in port clusters (Port Community System)
12. Cybersecurity of business information systems
13. Graphical modeling of business processes using computer tools
14. Hierarchical (organizational) models, whiteboard models, ICT infrastructure models, process landscape models
15. Data models, process models, operand rules, branching rules, etc.

#### 1.5. Modes of Instruction

☒ Lectures

☐ Seminars and workshops

☒ Exercises

☐ E-learning

☐ Field work

☒ Practical work

☒ Multimedia and Network

☐ Laboratory

☐ Mentorship

☐ Other \_\_\_\_\_

#### 1.6. Comments

#### 1.7. Student Obligations

Attendance at lectures and laboratory exercises, work on the e-learning platform, and a final oral exam.

#### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	0,5	Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment and evaluation include class participation, two computer-based midterm exams, and a final oral examination. Evaluation is carried out in accordance with the valid University and Faculty Study Regulations. During the course, a student can earn up to 70% of the total grade, while the remaining 30% can be achieved through the final exam. In each knowledge assessment, the student must master at least 50% of the learning outcomes, i.e., obtain at least 50% of the possible grading points.

Examples of exam questions:

1. Learning outcome 1: List and explain the fundamental components of business information systems.
2. Learning outcome 2: Identify who participates in business process modeling and explain the required scope of their analysis.
3. Learning outcome 3: Enumerate categories and types of risks in the development and implementation of business information systems.
4. Learning outcome 4: Explain the basic principles of information system security and the most common security threats.
5. Learning outcome 5: Analyze and synthesize the similarities and differences between maritime single windows used in administrative (MSW) and commercial (PCS) segments of port operations.
6. Learning outcome 6: Draw a process model, hierarchy, process landscape, and BPMN 2.0 model using the ARIS Express software tool.
7. Learning outcome 7: Draw a process model according to a given task using the ARIS Express software tool.

#### 1.10. Main Reading

Teaching materials are available on the e-learning platform.

M. Pavlić: Informacijski sustavi, Školska knjiga, Zagreb, 2011.

#### 1.11. Recommended Reading

1. Tijan, Edvard; Jović, Marija; Aksentijević, Saša; Pucihar, Andreja. "Digital transformation in the maritime transport sector." *Technological Forecasting and Social Change*, vol. 170, 2021, p. 120879, North-Holland.
2. Braidotti, Luca; Aksentijević, Saša; Tijan, Edvard; Balota, Adis. "The use of Bluetooth Beacons in Maritime Emergencies Mobile safety and security – DigLogs pilot project by University of Trieste." *2021 10th Mediterranean Conference on Embedded Computing (MECO)*, IEEE, 2021, pp. 1-4.
3. Marenković, Sven; Tijan, Edvard; Aksentijević, Saša. "Blockchain technology perspectives in maritime industry." *2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2021, pp. 1414-1419.
4. Aksentijević, Saša; Tijan, Edvard; Panjako, Ana; Mrčela, Gordana. "Digitalization of port access control: Case study Port of Šibenik." *2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2021, pp. 1294-1299.
5. Kapidani, Nexhat; Aksentijević, Saša; Tijan, Edvard; Kočan, Enis. "Establishing a National Maritime Single Window in small coastal countries." *2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2021, pp. 1448-1453.
6. Jović, Marija; Aksentijević, Saša; Plentaj, Borna; Tijan, Edvard. "Port Community System Business Models," 2021.
7. Torlak, Ivan; Tijan, Edvard; Aksentijević, Saša; Oblak, Renato. "Analysis of port community system introduction in Croatian seaports – Case study Split." *Transactions on Maritime Science*, vol. 9, no. 2, 2020, pp. 331-341, Sveučilište u Splitu, Pomorski fakultet.
8. Jović, Marija; Tijan, Edvard; Žgaljić, Dražen; Aksentijević, Saša. "Improving maritime transport sustainability using blockchain-based information exchange." *Sustainability*, vol. 12, no. 21, 2020, p. 8866, MDPI.
9. Torlak, Ivan; Tijan, Edvard; Aksentijević, Saša; Jugović, Alen. "Port Community System feasibility analysis – Case study Split." *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2020, pp. 1410-1415.
10. Tijan, Edvard; Jović, Marija; Aksentijević, Saša; Žgaljić, Dražen. "Electronic Transportation Management System Development in the Port of Rijeka." *International Academic Institute (IAI) 2020 Virtual Conferences on Education & Social Science and Business & Economics*, 2020, pp. 75-79.
11. Aksentijević, Saša; Tijan, Edvard; Jović, Marija; Munitić, Nataša. "Optimization of cargo container loading on railway wagons." *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2020, pp. 1373-1378.
12. Jović, Marija; Tijan, Edvard; Aksentijević, Saša; Sotošek, Božidar. "The role of electronic transportation management systems in seaport digitalization," 2019.
13. Tijan, Edvard; Agatić, Adrijana; Jović, Marija; Aksentijević, Saša. "Maritime National Single Window – A prerequisite for sustainable seaport business." *Sustainability*, vol. 11, no. 17, 2019, p. 4570, MDPI.
14. Jović, Marija; Kavran, Natalija; Aksentijević, Saša; Tijan, Edvard. "The transition of Croatian seaports into smart ports." *2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO)*, IEEE, 2019, pp. 1386-1390.
15. Tijan, Edvard; Aksentijević, Saša; Ivanić, Katarina; Jardas, Mladen. "Blockchain technology implementation in logistics." *Sustainability*, vol. 11, no. 4, 2019, p. 1185, MDPI.
16. Jović, Marija; Kavran, Natalija; Aksentijević, Saša; Tijan, Edvard. "Pametne luke," 2019.
17. Aksentijević, Saša; Marković, Dražen; Tijan, Edvard; Jardas, Mladen. "Application of social network analysis to port community systems." *2018 41st International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2018, pp. 1304-1310.
18. Tijan, Edvard; Jardas, Mladen; Aksentijević, Saša; Perić Hadžić, Ana. "Integrating maritime national single window with port community system – Case Study Croatia," 2018.
19. Aksentijević, Saša; Tijan, Edvard; Jugović, Alen. "Financial impact of forensic proceedings in ICT." *2017 40th International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2017, pp. 1454-1458.
20. Iskra, Ana; Tijan, Edvard; Aksentijević, Saša. "The modern approach to the analysis of logistics information systems." *2016 39th International Convention on Information, Communication and Electronic Technology (MIPRO)*, IEEE, 2016, pp. 1504-1508.



1.12.

*Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
M. Pavlić: Informacijski sustavi, Školska knjiga, Zagreb, 2011.	4	25
Teaching materials are available on the e-learning platform, <a href="https://moodle.srce.hr/2023-2024/course/view.php?id=192891">https://moodle.srce.hr/2023-2024/course/view.php?id=192891</a>	unlimited	25

1.13.

*Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in line with the European Standards and Guidelines for Quality Assurance, as implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rate results are analyzed and appropriate measures are adopted accordingly.



### Course description

Generic information		
Head of Course	Tanja Poletan Jugović, PhD	
Course	Passenger Transport Flows	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+0+0

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

The primary objectives of the course are: understanding and analysing passenger transport flows in relation to their forms, elements, and specific patterns of formation; analysing geo-transport, socio-economic, logistical and other factors of sustainable mobility; acquiring key knowledge and skills for planning and optimizing passenger transport flows, developing methodologies for the quantitative analysis of relevant passenger flow indicators; drawing conclusions about the current state of intensity, structure, and dynamics of passenger transport flows at global, regional, national and local levels; identifying contemporary trends and challenges in the development of passenger transport (sustainable mobility, digitalization, impact of climate change, changes in passenger behaviour, etc.). A special objective of the course is the integration of theoretical and practical knowledge and the preparation of students for the labour market through the practical component of independent research (for example, case study analysis of cities with sustainable transport systems, simulation and planning of optimal routes, creation of passenger tourist routes, optimization of passenger transport structure, parking transport planning, infrastructure capacity analysis, etc.).

### 1.2. Prerequisites for Course Registration

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### 1.3. Expected Learning Outcomes

### 1.3. Expected Learning Outcomes

After attending and passing the course, the student will be able to:

1. Differentiate and analyse relevant concepts, forms, and elements of the formation of passenger transport flows.
2. Assess the significance and current state of passenger flows in relation to transport modalities, travel motives (e.g., economic and tourism), sustainable mobility criteria, and other relevant factors.
3. Explain and critically analyse geo-transport, socio-economic, and logistical factors as well as the principles of formation, consolidation, and spatial distribution of passenger transport flows.
4. Apply the concept of sustainable mobility to evaluate passenger transport flows in the context of reducing environmental impact and improving the efficiency of the transport system.
5. Conduct an analysis of relevant indicators of passenger flow formation, including intensity, structure, dynamics, and temporal and spatial distribution, considering transport modalities, travel motives, and sustainability.
6. Develop methods and approaches for organizing and planning passenger transport flows, including creating tourist routes, parking traffic planning, and infrastructure optimization.





7. Prepare and present independent research on a specific practical example, using acquired knowledge and relevant analytical methods.

#### 1.4. Course Outline

Relevant concepts and elements in the formation of passenger transport flows. Basic characteristics and significance of passenger flows for the transport and economic system. Forms and specific features of different types of passenger transport flows. Categorization of passenger flows based on transport modalities, travel motives (economic and tourism purposes), and other criteria. Factors and fundamental principles of the formation, expansion, and consolidation of passenger transport flows (geo-transport, socio-economic, and logistical factors). Evaluation of passenger transport flows in the context of the sustainable mobility concept. Statistics monitoring and data collection methods for passenger flows. Analysis of relevant indicators of passenger transport flows (intensity, structure, dynamics, spatial and temporal distribution, emitting and receiving markets). Relevant features of the organization and planning of passenger transport flows (planning and creation of passenger and tourist routes, intermediaries in the organization and planning of passenger flows, supply and demand in passenger transport, accompanying flows of goods and information, parking transport). Trends and conditions influencing the development of passenger transport in the context of sustainable mobility and current influential factors. The content also includes a practical part – research of best practice examples and case studies through which students acquire skills relevant to the labour market (analysis and development of passenger transport flow plans for a specific city or region, analysis of the impact of seasonality on passenger flows, comparison of different transport modalities according to their efficiency and sustainability, etc.).

#### 1.5. Modes of Instruction

☒ Lectures

☐ Seminars and workshops

☐ Exercises

☐ E-learning

☐ Field work

☒ Practical work

☐ Multimedia and Network

☐ Laboratory

☐ Mentorship

☐ Other \_\_\_\_\_

#### 1.6. Comments

#### 1.7. Student Obligations

- 1<sup>st</sup> exam (with a minimum achievement of 50% of points)
- 2<sup>nd</sup> exam (with a minimum achievement of 50% of points)
- Research paper – preparation and presentation of a research paper/seminar (the research is evaluated according to detailed criteria with a minimum achievement of 50% of points)

#### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper	0,5	Experiment	
Written exam		Oral exam		Essay		Research	0,5
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							

#### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam





The procedure for assessing the acquired learning outcomes is conducted in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies in Rijeka as follows:

- Continuous knowledge assessment during classes – evaluates 70% of the acquired learning outcomes (LO) : 1<sup>st</sup> exam – 35% (LO 1-4) and 2<sup>nd</sup> exam – 35% (LO 5-6), with the requirement that the student must achieve at least 50% of the points in each activity.
- Preparation and oral presentation of a seminar within the research work on a given topic – evaluates 30% of the acquired learning outcomes (LO 7), with the requirement that the student must achieve at least 50% of the points.

Examples of evaluating learning outcomes in relation to defined learning outcomes are:

1. Analyse and interpret the types of passenger transport flows in relation to travel motives, using specific examples of tourist and economic passenger flows.
2. Compare the significance of tourist and economic passenger flows for the economy at the global, regional, and local levels, using concrete quantitative data.
3. Explain and interpret the geo-transport factors that influence the spatial distribution of maritime passenger flows, using case studies or quantitative data.
4. Compare the basic prerequisites of sustainable mobility using examples of selected cities in the context of passenger transport flows.
5. Identify and analyse two navigable areas of the Republic of Croatia that dominate in the intensity of scheduled maritime passenger transport, using current statistical data.
6. Systematize and explain the basic phases of planning passenger transport flows in urban structures, applying sustainable transport strategies.
7. Prepare and present a research paper (seminar) based on acquired knowledge, using a specific practical example (for instance, analysis of passenger flows on a ferry line, planning a specific transport-passenger route, etc.)

#### 1.10. Main Reading

- 1) teaching material for the e-course “Passenger Transport Flows” – accessible on the e-learning platform - Merlin (<https://moodle.srce.hr>) for the current academic year
- 2) Jean – Paul Rodrigue, The Geography of Transport Systems, -Fifth edition, New York: Routledge, 2020. (selected chapters)
- 3) Malić, A., Rendulić, I., Geoprometna obilježja svijeta, Dr. Feletar, Zagreb, 1995. (selected chapters)

#### 1.11. Recommended Reading

- ❑ Đukić, A., Prometna geografija-geoprometne odrednice globalizacije u prometu i turizmu, Sveučilište u Dubrovniku, Dubrovnik, 2001. (selected chapters),
- ❑ Current statistical sources with current data: Review of Maritime transport – UNCTAD, Shipping Statistics and Market Review, ISL (Institute of Shipping Economics and Logistics), Bremen; Statistički ljetopis Republike Hrvatske, Državni zavod za statistiku RH i dr.
- ❑ Scientific, professional papers published in foreign journals (Journal of Transportation Geography, Transportation Research...) and domestic journals (Pomorstvo, Naše more, Suvremeni promet), projects and research work connected with passenger transport flows, such as:
  - Poletan Jugović, T., Agatić, A., Gračan, D., Šekularac – Ivošević, S.: Sustainable activities in Croatian marinas – towards the “green port” concept, Multidisciplinary Scientific Journal Pomorstvo, Vol. 36, No. 2, Rijeka, 2022.
  - Mateja Paulić, M., Poletan Jugović, T., Šutalo Šamanić, V.: Structural analysis of air passenger flow in the Republic of Croatia from the COVID–19 pandemic impact perspective, Multidisciplinary Scientific Journal Pomorstvo, Vol. 36, No. 2, Rijeka, 2022.
  - Zoran Kovačević, Z., Šekularac-Ivošević, S., Poletan Jugović, T.: The Impact of Marketing Information on the Decisions of Nautical Tourists Visiting the Eastern Adriatic Region, Journal of the Faculty of Maritime Studies Kotor - Journal of Maritime Sciences, Vol. 24, No. 1/2023.



1.12.

*Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
teaching material for the e-course "Passenger Transport Flows" - accessible on the e-learning platform - Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> ) during the current academic year	unlimited	30
Jean – Paul Rodrigue, The Geography of Transport Systems, Fifth edition, New York: Routledge, 2020. (selected chapters)	3	30
Malić, A., Rendulić, I., Geoprometna obilježja svijeta, Dr. Feletar, Zagreb, Dr. Feletar, 1995. (selected chapters)	5	30

1.13. *Quality Assurance*

The quality of studying is monitored in accordance with the ISO 9001 system and in line with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rate results are analysed and appropriate measures are taken.

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 3.2. Course description

Generic information		
Head of Course	Siniša Vilke, PhD Ljudevit Krpan, PhD	
Course	Logistics in Land Transport	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30 + 0 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to provide fundamental knowledge of logistics activities in land transport with an emphasis on improving the organization of the transport process in line with modern requirements for identifying and solving logistics problems.

##### 1.2. Prerequisites for Course Registration

##### 1.3. Expected Learning Outcomes

1. Analyze and parse the planning and organization of logistics services relevant to road transport.
2. Classify and compare the implementation and control of logistics activities in the road transport process.
3. Classify and analyze the planning and organization of logistics services in rail transport and combined transport.
4. Analyze the concept of mobility as a logistics service.
5. Analyze and parse the implementation and control of logistics activities in the transport process of rail and combined transport.
6. Formulate and connect the integral system of municipal waste collection on a given example.
7. Determine the number of means of transport for the transportation of municipal waste with an extrapolation of the necessary daily trips from transfer stations to the collection point on a given example.

##### 1.4. Course Outline

The strategic importance of logistics. Logistics systems and logistics sectors. Elements of the logistics service. Transport and logistics chain. Optimization of logistics chains. Distribution channels. Interrelation between the logistics chain and the distribution chain. Information and electronic communication support for logistics. Land use and transport planning and logistics. Land transport planning and logistics. Defining transport routes to create a transport network. Organization of corporate logistics. The concept of supply chain. Transport network in the logistics system. Establishment and development of a logistic partnership. Organization of the land transport process. Logistics activities and procedures in the organization of land transportation.

##### 1.5. Modes of

☒ Lectures

☒ Practical work



<i>Instruction</i>	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and network					
	<input type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory					
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship					
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other					
<i>1.6. Comments</i>							
<i>1.7. Student Obligations</i>							
<i>1.8. Assessment<sup>1</sup> of Learning Outcomes</i>							
Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							
<i>1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam</i>							
<p>The procedure of assessment of acquired learning outcomes is carried out by the Study Regulations of the University of Rijeka and the Study Regulations at the Faculty Maritime Studies in Rijeka as follows:</p> <ul style="list-style-type: none"> <li>- through continuous assessment of knowledge during classes, 70% of the acquired learning outcomes are evaluated within the 1st exam (35%), and the 2nd exam (35%).</li> <li>- 30% of the acquired learning outcomes are evaluated in the final exam.</li> </ul> <p>Examples of evaluation of learning outcomes in relation to the set learning outcomes are:</p> <ol style="list-style-type: none"> <li>1. Explain the characteristics and specificities of planning and organizing logistics services in road transport.</li> <li>2. Describe the method of implementing and controlling logistics activities in the road transport process.</li> <li>3. Explain the principles and specificities of planning and organizing logistics services in rail transport.</li> <li>4. Explain the principles and characteristics of implementing and controlling logistics activities in the rail transport process.</li> <li>5. Determine the integrated municipal waste collection system using the given example.</li> <li>6. Define the projection of daily trips and determine the number of means of transport for transporting municipal waste from transfer stations to the collection center according to the given example.</li> </ol>							
<i>1.10. Main Reading</i>							
<ol style="list-style-type: none"> <li>1. Baričević, H., Vilke, S.: Logistika i sigurnost kopnenog prometa, Pomorski fakultet, Rijeka, 2016.</li> <li>2. Teaching material for the e-course available in the MS system - Merlin (<a href="https://moodle.srce.hr">https://moodle.srce.hr</a>)</li> <li>3. Zelenika, R.: Logistički sustavi, Ekonomski fakultet, Rijeka, 2005.</li> <li>4. Segetlija, Z.: Distribucija, Ekonomski fakultet, Osijek, 2006.</li> </ol>							
<i>1.11. Recommended Reading</i>							
<ol style="list-style-type: none"> <li>1. Vilke, S.; Mance, D.; Debelić, B.; Maslarić, M: Correlation between freight transport industry and economic growth – panel analysis of CEE countries, Promet–Traffic &amp; Transportation, 33 (2021), 4, 517 – 526.</li> <li>2. Bloomberg D., LeMay, J., Hanna, B.: Logistika, Mate d.o.o., Zagreb, 2006.</li> <li>3. Tilanus, B.: Information Systems in Logistics and Transportation, Emerald Group Publishing Limited, London, 1997.</li> <li>4. Šamanović, J.: Logistički i distribucijski sustavi, Ekonomski fakultet, Split, 1999.</li> </ol>							



**1.12. Number of Main Reading Examples**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
1. Baričević, H., Vilke, S.: Logistika i sigurnost kopnenog prometa, Pomorski fakultet, Rijeka, 2016.	5	30
2. Teaching material for the e-course available in the MS system - Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	-	30
3. Zelenika, R.: Logistički sustavi, Ekonomski fakultet, Rijeka, 2005.	5	30
4. Segetlija, Z.: Distribucija, Ekonomski fakultet, Osijek, 2006.	5	30

**1.13. Quality Assurance**

The quality of studies is monitored according to the system ISO 9001 and according to the European standards and guidelines for quality assurance introduced at the Faculty Maritime Studies in Rijeka. Once a year the passage results are analyzed and appropriate measures are taken, and once a semester a survey is conducted among the students.



### 3.2. Course description

Generic information		
Head of Course	Livia Maglić, PhD	
Course	Sustainable Marinas	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+0+15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Acquiring knowledge of the principles of environmentally sustainable management, eco-labels, environmental and energy certificates, and innovative technologies used to achieve environmental sustainability in marinas.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

After passing the exam, students are expected to be able to:

1. Explain the principles of sustainable management in a marina
2. Interpret eco-labels for the quality of services in marinas
3. Distinguish and interpret quality certificates and energy certificates in marinas
4. Distinguish individual technological solutions in planning the ecological sustainability of marinas
5. Apply the concept of environmental sustainability in marina management
6. Critically assess the effect of the application of certain innovative technologies on the sustainability of marinas
7. Compare models of environmentally sustainable management with the given examples

##### 1.4. Course Outline

Definition of sustainability and sustainable management of marinas. Categorisation of marinas. Principles of sustainable management in marinas. Legal framework in the field of sustainable environmental management. Strategy for environmentally sustainable management. Quality in marinas and eco-labels. Blue Flag Criteria. Blue Star Program. Clean Marinas Initiative. ADAC marina assessment. Golden anchor. ISO-energy certificates (EMS). Quality certificates (CMS). Information and communication protocols in marinas. Information technologies for sustainable berth management (link occupancy sensors, booking management, etc.). Innovative technologies for sustainable management of the marine environment in marinas (plastic trap bin device, etc.). Innovative technologies for sustainable energy management. Continuous control and minimisation of energy consumption in business with the application of energy efficiency principles (Remote water & electricity supply manager, etc.). Renewable energy planning sources (photovoltaic pavement, etc.). Quality management in marinas using sensors, cameras, and drones. Sustainable waste and wastewater management (promoting and implementing more efficient waste management and treatment). Examples of good practice in the world and the Republic of Croatia.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input checked="" type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input checked="" type="checkbox"/> Field work		<input checked="" type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____			
1.6. Comments							
1.7. Student Obligations							
1. Two colloquiums 2. Design and present a project assignment 3. Final exam.							
1.8. Assessment of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper	0,5	Experiment	
Written exam		Oral exam	0,5	Essay		Research	0,5
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

#### Evaluation procedure:

The procedure for evaluating the acquired learning outcomes is carried out according to the Regulations on Studies of the University of Rijeka and the Rulebook on Studies at the Faculty of Maritime Studies in Rijeka as follows:

- 70% of the acquired learning outcomes are evaluated through continuous knowledge assessment during the teaching process: through the 1st colloquium - learning outcomes 1-3 (25%), 2nd colloquium - 4-7 (25%), project assignment - learning outcomes 1-7 (20%);
- 30% of the acquired learning outcomes (1-7) are evaluated at the final part of the exam, with a minimum of 50% of the available points are necessary for passing the final exam.

#### Examples of evaluation:

1. Specify the basic principles of sustainable management.
2. Define and classify the differences between the criteria for the adoption of the Blue Flag and Golden Anchor eco-labels.
3. In the given example of a marina, identify certificates in the fields of CMS and EMS.
4. Specify the intelligent technologies used in marinas for the sustainable management of the marine environment and wastewater management.
5. Apply the concept of sustainable management to the default marina.
6. Analyse the effects of the introduction of information technology on berth booking.
7. Compare and evaluate the ecologically positive effects of using innovative technologies on a default marina.

#### 1.10. Main Reading

- ❑ Course presentations available on the e-learning system Merlin
- ❑ EPA (2005.) Marina Environmental Management Plan

#### 1.11. Recommended Reading





1. Maglić, L. et al. (2024). Evaluation of an automated vessel recognition system: case study in Port of Cristo, IOP Conf. Ser.: Earth Environ. Sci. 1423 012001
2. Maglić, L., Maglić, L., Grbčić, A., & Gulić, M. (2022). Composition of Floating Marine Litter in Port Areas of the Island of Mallorca. Journal of Marine Science and Engineering, 10(8), 1079. <https://doi.org/10.3390/jmse10081079>
3. L. Maglić, A. Grbčić, L. Maglić and A. Blažina, "Evaluation of ultrasonic berth sensors in the port environment: case study Port of Cristo," 2022 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), Maldives, Maldives, 2022, pp. 1-5, doi: 10.1109/ICECCME55909.2022.9988615.
4. Maglić, L., Maglić, L., Grbčić, A., Gulić, M. (2022). Marine Litter Composition in Port Areas on Mallorca Island. In: Simone Mancini and Luigi Vitiello, editors. Prime Archives in Marine Science. Hyderabad, India: Vide Leaf
5. I. Ognjanović, L. Maglić and B. Tošić, (2021). IT Enhanced Process Management in ports: Comprehensive Evaluation Framework, 2021 10th Mediterranean Conference on Embedded Computing (MECO), Budva, Montenegro, 2021, pp. 1-4, doi: 10.1109/MECO52532.2021.9460144.
6. Boljat, H.U., Vilke, S., Grubišić, N., Maglić, L. (2021). Application of multi-criteria analysis for the introduction of green port management practices: an evaluation of energy efficient mobility in nautical ports. Scientific Journals Maritime University of Szczecin, Zeszyty Naukowe Akademia Morska w Szczecinie, 65(137), <http://dx.doi.org/10.17402/462>
7. Maglić, L., Varaždinac, P., Škiljan, I. (2019). Multi-Criterion decision model for marina location selection in the County of Primorje and Gorski Kotar - NAŠE MORE: znanstveni časopis za more i pomorstvo, 66(1), 28-36.
8. Maglić, L., Maglić, L., Vilke, S. (2012). Ocjena postojećeg stanja i razvojni planovi luka nautičkog turizma Primorsko-goranske županije, Suvremeni promet, 32. (5-6), 395-399.
9. Šantić, L., Vilke, S. i Grubišić, N. (2011). Čimbenici štetnog djelovanja cruising-turizma na brodski okoliš. Naše more: znanstveni časopis za more i pomorstvo, 58. (5-6), 229-243.
10. PIANC: "Sustainable ports"- A guide for port authorities, The World Association for Waterborne Transport Infrastructure
11. David S. Liebl (2002) Environmental Best Management Practices for Marinas and Boat Yards, University of Wisconsin

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
EPA (2005.) Marina Environmental Management Plan Unlimited	Unlimited	

1.13. Quality Assurance

The quality of education is monitored following the ISO 9001 system and the European Standards and Guidelines for Quality Assurance, as implemented at the Faculty of Maritime Studies in Rijeka. Each year, student pass rates are analysed, and appropriate measures are taken to improve academic outcomes.



### 3.2. Course description

Generic information		
Head of Course	Dario Ogrizović, PhD	
Course	Simulation and Modelling	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30 + 30 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The course is intended to introduce students to simulation modelling and its application in the analysis and design of business processes. Simulation modelling enables the creation of dynamic business process models, execution of simulation experiments with the model and the evaluation of business process performance. Discrete event simulation allows the development of detailed queue system models.

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

After finishing the course, the students will be able:

1. Distinguish between types of systems, models and modelling
2. Analyse and compare types of simulations
3. Identify problems in the field of business systems that can be solved by different methods of simulation modelling
4. Apply simulation modelling to analyse and design business processes
5. Create simulation models using software tools that support simulation modelling methods and techniques and their verification
6. Create appropriate methods for conducting simulation experiments
7. Analyse and interpret solutions from conducted simulation experiments
8. Create business decision processes based on the results of simulation experiments

##### 1.4. Course Outline

Basic ideas of simulation. Simulation modelling. Modelling and computers. Simulation in decision making. Types of simulation models. Simulation models development. Basic concepts of discrete event simulation. Structure of computer tools for simulating discrete events. Conceptual simulation models. Activity cycle diagrams. Simulation performance strategies. Time shift mechanisms. Simulation strategies. FlexSim simulation software. Simulation software selection criteria. Basic concepts, method of modelling, execution of simulation experiments and their analysis. Modelling and simulation of several problems with FlexSim software. Computer model verification. Evaluation of the conceptual model. Input data analysis. Statistical distributions. Estimation of distribution parameters. Simulation experiments planning. Design of simulation experiments. Variance reduction techniques. Output data analysis of simulation experiments.



<p>1.5. Modes of Instruction</p>	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input checked="" type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
<p>1.6. Comments</p>							
<p>1.7. Student Obligations</p>							
<p>1. Attendance and activity in class            2. Attendance and activity in laboratory exercises            3. Project            4. Written exam (midterms and exam)</p>							
<p>1.8. Assessment<sup>1</sup> of Learning Outcomes</p>							
Course attendance	2	Class participation	1	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project	1	Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The process of evaluation of the acquired learning outcomes takes place during continuous assessments (through class activities (10%), preparation and presentation of a project (20%), 2 midterm exams - total 40%) and at the final part of the exam (30%). A minimum of 50% of points must be achieved in individual knowledge assessments.

Examples of evaluating learning outcomes in relation to the learning outcomes that are set are:

1. Distinguish between types of systems, models and modelling
2. Analyse and compare types of simulations
3. Identify problems in the field of business systems that can be solved by different methods of simulation modelling
4. Apply simulation modelling to analyse and design business processes
5. Create simulation models using software tools that support simulation modelling methods and techniques and their verification
6. Create appropriate methods for conducting simulation experiments
7. Analyse and interpret solutions from conducted simulation experiments
8. Create business decision processes based on the results of simulation experiments

### 1.10. Main Reading

1. Law, A.M. 2024. Simulation Modeling and Analysis, 6th Edition, McGraw-Hill Education.
2. Banks, J., Carson, J.S., Nelson, B. L., Nicol, D.M. 2013. Discrete-Event System Simulation: Pearson New International Edition, Pearson Higher Ed.

### 1.11. Recommended Reading

1. Robinson, S. 2014. Simulation: The Practice of Model Development and Use (2nd edition), Red Globe Press

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Law, A.M. 2024. Simulation Modeling and Analysis, 6th Edition, McGraw-Hill Education.	3	2
Banks, J., Carson, J.S., Nelson, B. L., Nicol, D.M. 2013. Discrete-Event System Simulation: Pearson New International Edition, Pearson Higher Ed.	2	2

### 1.13. Quality Assurance

Quality assurance is monitored in accordance with the ISO 9001 system and the European standards and guidelines for quality assurance, which are implemented at the Faculty of Maritime Studies in Rijeka. Yearly analysis of quantitative student examination data is conducted and appropriate measures are adopted accordingly.



General Information		
Head of Course	Ana Perić Hadžić, PhD Dražen Žgaljić, PhD	
Course	Project Management	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	mandatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+15+0

1. GENERAL COURSE DESCRIPTION		
<i>1.1. Course Objectives</i>		
The objective of this course is to explain the importance of projects and international projects, as well as the role of project management in developing business systems. Emphasis is placed on strategic preparation, evaluation, initiation, and development of project management models at various management levels to enable students to manage projects in the context of modern economic development.		
<i>1.2. Prerequisites for Course Registration</i>		
None		
<i>1.3. Expected Learning Outcomes</i>		
<p>Upon completion of the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Interpret fundamental theoretical and practical concepts of project management and apply them in the development of business systems.</li> <li>2. Differentiate and explain key project management processes (strategic preparation, initiation, implementation, control).</li> <li>3. Analyze and evaluate the impact of various stakeholders (interest and influence groups).</li> <li>4. Apply advanced skills and competencies for effective project implementation and resolution of complex organizational and related project management issues.</li> <li>5. Define and interpret concepts related to the structure of projects financed by EU funds and programs.</li> <li>6. Develop, analyze, and formulate their own project idea and prepare a comprehensive project proposal.</li> </ol>		
<i>1.4. Course Outline</i>		
Theoretical-methodological definition of project management (definition of project, project management, project life cycle, stakeholders). Project management processes (project planning, organization, leadership, control). Strategic aspects of project management, enterprise development project management (development policy, investment policy, investment project evaluation). Management of international projects. EU organization and programs (with an emphasis on programs funding transport development), EU project planning, Logical Framework (Logframe), measuring goal achievement, managing work packages and project results, consortium agreements and intellectual property protection, communication and project team management, exploitation, dissemination, and sustainability of EU projects, quality planning, quality assurance and control, risk management. Case Studies: Business Plan for a Port, Feasibility Study for a Concession on Maritime Domain, EU Project.		
<i>1.5. Modes of</i>	x Lectures	x Practical Work



<i>Instruction</i>	<input type="checkbox"/> Seminars and workshops		<input type="checkbox"/> Multimedia and Network				
	<input checked="" type="checkbox"/> Exercises		<input type="checkbox"/> Laboratory				
	<input type="checkbox"/> E-Learning		<input type="checkbox"/> Mentorship				
	<input type="checkbox"/> Field work		<input type="checkbox"/> Other _____				
1.6. <i>Comments</i>							
1.7. <i>Student Obligations</i>							
Students must attend at least 70% of lectures and exercises, pass midterm exams (continuous assessment), and submit a project to qualify for the final exam.							
1.8. <i>Assessment<sup>1</sup> of Learning Outcomes</i>							
Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project	1	Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							
1.9. <i>Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam</i>							
<p>The final grade for the course is the sum of the percentage achieved during the course (70% of the grade) and the percentage achieved on the final exam (30% of the grade), in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Study at the Faculty of Maritime Studies in Rijeka. Continuous Assessment of knowledge:</p> <ul style="list-style-type: none"> <li>- a minimum of 50% of the grading points must be achieved.</li> <li>- project - students must demonstrate acquired knowledge and the application of project methodology on a selected example</li> </ul> <p>Final Exam:</p> <p>A minimum of 50% of the grading points must be achieved on the final exam.</p> <p>Examples of Evaluating Learning Outcomes in Relation to Set Learning Objectives:</p> <ol style="list-style-type: none"> <li>1. Draw the project life cycle and identify the key phases of the project life cycle.</li> <li>2. List the basic processes/functions of project management and explain their purpose.</li> <li>3. Explain who the primary and secondary stakeholders (interest groups) are and describe their role in the project.</li> <li>4. Using a given example, present the sequence of project activities using the Critical Path Method, identify the critical path of project activities, calculate the total project duration, and depict the sequence of project activities using a Gantt chart.</li> <li>5. Explain the role of structural funds and European Union programs in financing projects related to sustainable transport development.</li> <li>6. Formulate your own project proposal, independently or in a team, which includes a project description, the relevance of the project application, the implementation capacities of the applicant and partners (if applicable), project efficiency and feasibility, project budget, and project sustainability.</li> </ol>							
1.10. <i>Main reading</i>							
<ol style="list-style-type: none"> <li>2. Authorized lectures on the e-learning platform (online materials).</li> <li>3. Ivica Veža et al., "Upravljanje projektima," University of Split, Faculty of Electrical Engineering, Mechanical Engineering, and Naval Architecture, 2011.</li> <li>4. Anton Hauc, "Projektni menadžment i projektno poslovanje," Business and Management College, Zagreb, 2007.</li> <li>5. Marčelo Dujanić, "Projektiranje organizacije i upravljanje projektima," Polytechnic of Rijeka, 2006.</li> <li>6. Mislav Ante Omazić, "Projektni menadžment," Synergy Publishing, Zagreb, 2005.</li> </ol>							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

**1.11. Supplementary Literature (at the time of study program proposal submission)**

1. Online Manual on EU Projects, <https://irmo.hr/prirucnik-o-eu-projektima/>
2. Maletić, Ivana; Kosor, Kristina; Japunčić, Tea; Žagar, Davorka; Čakanić, Tomislav: A Guide to EU Programs and Funds 2021 – 2027, Funding Opportunities for Projects in Croatia.
3. Ana Odak, Marija Rajaković, Marko Žabojec: The Financial Perspective of the European Union 2021 – 2027, with a Focus on Cohesion Policy, 2021, Školska Knjiga.
4. Vajde Horvat, R., Smolčić Jurdana, D. (Eds.), EU Project Management – Challenges and Aspects, University of Rijeka, Rijeka 2009.
5. Project Management Institute, A Guide to the Project Management Body of Knowledge (PMBOK Guide), Fourth Edition, 2008.
6. Guidelines for Managing the Project Cycle, Volume 1, Support for Effective Implementation of the European Commission's External Aid, Central State Office for Development Strategy and Coordination of European Union Funds, Zagreb, October 2008 (translated into Croatian).

**1.12. Number of Copies of Required Literature in Relation to the Number of Students Currently Enrolled in the Course**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Authorized lectures on the e-learning platform (online materials).	-	15
Ivica Veža et al: Project Management, Split: University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, 2011.	2	15
Anton Hauc: Project Management and Project Business, College of Business and Management, Zagreb, 2007.	5	15
Omazić, Mislav Ante: Project Management, Zagreb, Sinergija Publishing, 2005.	5	15
Dujanić, Marčelo: Designing Organizations and Project Management, Textbooks of the Polytechnic of Rijeka = Manualia Collegium Politechnic Fluminensis, Rijeka: Polytechnic, 2006	1	15

**1.13. The methods for monitoring quality that ensure the acquisition of learning outcomes, skills, and competencies include:**

The quality of studies is monitored in accordance with the ISO 9001 system and European standards and guidelines for quality assurance (ESG), which are implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rates are analyzed, and appropriate measures are taken.





### 3.2. Course description

Generic information			
Head of Course	Borna Debelić, PhD		
Course	Maritime Financing		
Study Programme	Logistic and Management in Maritime Industry and Transport		
Type of Course	Mandatory		
Year of Study	2.		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6	
	Number of Hours (L+E+S)	30 + 15 + 0	

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Acquiring knowledge in the special field of financing maritime projects and maritime organizations, necessary for persons responsible for managing and leading business and technological processes in maritime projects and organizations.

##### 1.2. Prerequisites for Course Registration

/

##### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Describe the system, market structures and elements of investment in the maritime sector, as well as sources, methods and models of financing.
2. Describe the principles, constituent elements and significance of financing the purchase of new and used ships, and describe the sources of possible financing.
3. Analyse the elements of a credit transaction in the purchase and sale of ships, and describe the calculation and repayment models and analyse the return via annuity in relation to instalments.
4. Analyse the impact of liquidity and solvency on debt servicing management from the aspect of the inflow of business funds.
5. Analyse and explain financial transactions and their basic principles in the purchase and sale of ships, and indicators of business success as a basis for financial decisions and risk management.
6. Apply quantitative and qualitative methods of analysing the inflow of business funds, operating costs, profit and loss account analysis, and approaches, methods and techniques of risk management from the aspect of financing.
7. Identify and analyse the specifics of financing infrastructure investments in the maritime sector and transport.

##### 1.4. Course Outline





General information about investments in the maritime sector. Sources, methods and models of financing in the maritime sector. Financing the construction of new ships from public sources and commercial banks. Financing the acquisition of used ships and sources of funds. Purchase of used ships and specific reasons for buying and selling. Basic elements of a credit transaction when buying and selling ships. Interest and principal, calculation and repayment models. Loan repayment by annuity and by instalments. Calculation of Euribor. Liquidity and solvency in the domain of debt servicing management and expected inflow of funds. Analysis of financial transactions when buying and selling ships and basic principles and conditions. Forecasting the inflow of business funds, operating costs, analysis of the profit and loss account, and risk management from the aspect of debt financing. Instruments of securing receivables. Specific financing of infrastructure investments in the maritime sector and transport. Documentation and execution of financial transactions.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work					
	<input checked="" type="checkbox"/> Seminars and workshops	<input checked="" type="checkbox"/> Multimedia and Network					
	<input checked="" type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory					
	<input type="checkbox"/> E-learning	<input checked="" type="checkbox"/> Mentorship					
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____					
1.6. Comments							
1.7. Student Obligations							
Regular attendance at classes and completion of homework assignments.							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1,5	Class participation	1	Seminar paper		Experiment	
Written exam	1,5	Oral exam		Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Seminar paper and presentation (discussion) in class (10% of learning outcomes) in which students analyse the financing system and sources of financing in the maritime sector and their characteristics as well as their impact on business, as well as the principles, components and significance of different sources and dynamics of financing (I1 - I7) from the aspect of contemporary maritime organizations and projects.

Written continuous knowledge assessment (2 colloquiums, each worth 30% of learning outcomes, which is a total of 60% of learning outcomes and a minimum of 50% of the points achieved per colloquium) in which the student demonstrates understanding of theoretical concepts and practical implications of specialist financing in the maritime sector (I1 - I7), mechanisms of action and effects on the operations of maritime companies and on the economy as a whole.

Final written examination (30% of learning outcomes and minimum 50% of points achieved) in which the student demonstrates understanding of the application and techniques of financial transactions and financial processes in maritime systems and projects, in the function of making quality management decisions on financing development and infrastructure processes and projects in the maritime sector (I1 - I7).

### 1.10. Main Reading

1. Teaching materials on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Batalić, M., Mitrović, F.: *Financiranje u pomorstvu*, Pomorski fakultet Split, Split, 2010.
3. Orsag, S.: *Poslovne financije*, Avantis, Zagreb, 2015.

### 1.11. Recommended Reading

1. Harwood, S.: *Shipping finance*, third edition, Euromoney books, 2006.
2. Bhimani, A., et al.: *Upravljačko računovodstvo i računovodstvo troškova*, Mate, Zagreb, 2018.
3. Paine, F.: *The Financing of Ship Acquisitions*, Coulsdon, 1989.
4. Stokes, P.: *Ship finance*, second edition, LLP, 1997

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Batalić, M., Mitrović, F.: <i>Financiranje u pomorstvu</i> , Pomorski fakultet Split, Split, 2010.	6	70

### 1.13. Quality Assurance

The quality of studying is continuously monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies, University of Rijeka. An analysis of exam taking is prepared annually, and a survey among students is conducted every semester.



### 3.2. Course description

Generic information			
Head of Course	Borna Debelić, PhD		
Course	Shipping and Port Management		
Study Programme	Logistic and Management in Maritime Industry and Transport		
Type of Course	Elective		
Year of Study	2.		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4	
	Number of Hours (L+E+S)	30 + 0 + 0	

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

Acquiring knowledge in the specific field of port and shipping company management, essential for persons responsible for the successful operation of major maritime economic activities.

### 1.2. Prerequisites for Course Registration

/

### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Describe the characteristics of the market structure and parts of the business environment of maritime companies in the context of modern strategic and development planning of port systems.
2. Describe the principles, components and significance of financial and economic planning and the evaluation of port system development plans from the aspect of overall transport and economic development.
3. Analyse information on costs in ports collected from various sources and, based on the analysis conducted, identify possible business opportunities, predict cost levels and trends in costs and values of port services and port tariffs and fees that are important for effective management decision-making.
4. Analyse the impact of measures and instruments of development policy and agency relations in ports and understand the mechanisms of their action and effects on business operations as well as on the competitiveness of the transport route.
5. Explain the specifics of the management system of shipping companies, and indicators of business success as a basis for management decisions in shipping from the aspect of managing market and non-market risks.
6. Apply quantitative and qualitative methods of measuring and evaluating business results in shipping and describe the formation and dynamics of freight rates in shipping.
7. Determine the role and significance of ship cost optimization with regard to the specifics of technical and commercial management in shipping and in relation to indicators of business success.

### 1.4. Course Outline



Contemporary strategic and development planning of port systems. Financial and economic evaluation of port system development plans. Long-term, medium-term and short-term planning of port system development in the context of overall transport development and development of local and regional economy with emphasis on the development of the port community. Cost dynamics in port operations and cost accounting in ports as a basis for managerial decision-making. Economic and financial indicators of port system business performance from the aspect of providing public services and commercial services of concessionaires. Determining the value of port services in the context of total transport costs. Port fees and tariffs as determinants of port business performance and competitiveness of the transport route within the framework of modern transport networks and competitiveness between ports. Agency relations in the port governance and management system. Specificities and management systems of shipping companies. Labor productivity, economy and profitability of operations as a basis for managerial decision-making in shipping companies. Measurement and evaluation of business results of shipping companies. Formation and dynamics of freight rates in maritime shipping, with an emphasis on the differences and processes of forming freight rates in individual types of maritime shipping activities. Optimization of ship voyage costs in the context of market dynamics. Specificities of technical and commercial management in shipping, and modern approaches to chartering ships and ship space. Indicators of business success in maritime shipping as a determinant of management success.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work					
	<input type="checkbox"/> Seminars and workshops	<input checked="" type="checkbox"/> Multimedia and Network					
	<input type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory					
	<input type="checkbox"/> E-learning	<input checked="" type="checkbox"/> Mentorship					
	<input checked="" type="checkbox"/> Field work	<input type="checkbox"/> Other _____					
1.6. Comments							
1.7. Student Obligations							
Regular attendance at classes and completion of homework assignments.							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1	Class participation	1	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Written continuous knowledge assessment (2 colloquiums, each worth 35% of the learning outcomes, which is a total of 70% of the learning outcomes and a minimum of 50% of the points achieved per colloquium) in which the student demonstrates an understanding of the theoretical concepts and practical implications of specialist management in shipping and port systems and managerial planning (I1 - I7), the mechanisms of their operation and the effects on the operations of shipping and port companies as well as on economic trends, and parts of the business environment of entities in shipping and ports.

Final written exam (30% of the learning outcomes and a minimum of 50% of the points achieved) in which the student demonstrates an understanding of the application and techniques of managing business processes and transactions in shipping and port systems, in the function of quality reporting, and the possibility of applying managerial strategies for improving business processes and managing services (I1 - I7).

### 1.10. Main Reading

1. Teaching materials on the e-learning system – Merlin (<https://moodle.srce.hr>)
2. Visvikis, I.D., Panayides, P.M.: Shipping Operations Management, Springer International Publishing, 2017.
3. Haralambides, H. E.: Port Management, Palgrave Macmillan, London, 2015.
4. Mitrović, F., Kesić, B., Jugović, A.: Menadžment u brodarstvu i lukama, Pomorski fakultet Split, 2010.
5. Debelić, B.: Agency Theory and a Concession Relation in Ports Open to Public Traffic in the Function of Empowerment of Entrepreneurial Initiatives, Pomorstvo: Scientific Journal of Maritime Research, 27 (1), 2013., p. 225-246.
6. Buble, M.: Management, Ekonomski fakultet, Split, 2000.

### 1.11. Recommended Reading

1. Alderton, P. M.: Port Management and Operations, Routledge, London, 2020.
2. Stuchery, R. W.: General Aspect of Port Management, Bremen, 1990.
3. Branch, A. E.: Elements of Port Operation and Management, London, 1986.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Mitrović, F., Kesić, B., Jugović, A.: Menadžment u brodarstvu i lukama	30	75
Buble, M., Management	15	

### 1.13. Quality Assurance

The quality of studying is continuously monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies, University of Rijeka. An analysis of exam taking is prepared annually, and a survey among students is conducted every semester.



### 3.2. Course description

Generic information		
Head of Course	Svjetlana Hess, PhD	
Course	Optimization of the Transport Process	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+0+10

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The primary objective of the course is to equip students with the ability to apply selected methods for transport process optimization. This is achieved through mastering techniques, performing analytical calculations, and analyzing results, enabling students to gain practically applicable knowledge and skills necessary for optimal and efficient transport process planning and organization.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

Upon successful completion of the course, students will be able to:

1. List the basic parameters and phases of the transport process and determine decision-making criteria for optimal organization
2. Formulate a model for organizing the movement of transport vehicles and determine the appropriate method for solving and finding the optimal solution for goods distribution
3. Compare types of itineraries and explain the differences between them
4. Plan travel routes, schematically present and solve an illustrative example of a transport process (itinerary) by calculating all necessary travel indicators
5. Solve a multi-phase transportation problem using dynamic programming and interpret the optimal solution with respect to the defined criteria and constraints
6. Identify possible changes and deviations under conditions of uncertainty

##### 1.4. Course Outline

Analytical tools and techniques necessary for optimal organization of the transport process, types of itineraries, calculation of all transport process indicators for a given itinerary, operational planning problems, distribution network problems, dynamic programming in transportation problems, resource allocation and assignment (transport vehicles), organization of vehicle loading, solving selected examples with widely available software support (MS Excel Solver or WinQSB). Emphasis is placed on problem-solving techniques and applying analytical methods to concrete examples where quantification and optimization of the transport process are required.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input checked="" type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input checked="" type="checkbox"/> Practical work <input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____			
1.6. Comments							
1.7. Student Obligations							
Students are required to attend at least 70% of the classes. They must complete assignments and a midterm exam during the course, and take a final exam.							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1.3	Class participation		Seminar paper	2.0	Experiment	
Written exam	1.0	Oral exam		Essay		Research	
Project		Continuous Assessment	0.7	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.





### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

During the course, students can earn up to 70% of the grade through a midterm and seminar paper (learning outcomes: 1, 2, 4, and 5), and 30% through the final exam (learning outcomes: 1, 3, and 6). The final exam evaluates comprehensive theoretical knowledge and understanding of specific knowledge in the organization and optimization of transport processes, with application to real-world cases in transport and logistics. Students must earn a minimum of 35% of total points to be eligible for the final exam and must score at least 50% to pass.

Examples of Assessment for Each Learning Outcome:

1. List the basic parameters and phases of the transport process and determine the decision-making criteria for optimal organization
2. Formulate a model for organizing the movement of transport vehicles and determine an appropriate solution method for goods distribution
3. Compare types of itineraries and explain the differences
4. Plan a travel route, schematically present and solve an illustrative example of a transport process (itinerary), calculating all relevant travel indicators
5. Use dynamic programming to solve a multi-phase transportation problem and explain the optimal solution based on the defined criteria and constraints
6. Identify potential changes and deviations under uncertainty

### 1.10. Main Reading

1. Course materials available on the e-learning platform – Merlin (<https://moodle.srce.hr>)
2. Backović, M., Vuleta, J., Popović, Z., Ekonomsko matematički metodi i modeli, Ekonomski fakultet Univerziteta u Beogradu, (udžbenik i zbirka zadataka), 2020.

### 1.11. Recommended Reading

1. Stanković, R., Pašagić Škrinjar, J., Logistika i transportni modeli, autorizirana predavanja, web izdanje, Fakultet prometnih znanosti, Zagreb, 2015.
2. Lindov, O., Džaferović, S., Tehnologija cestovnog transporta, zbirka zadataka, Sarajevo, 2011.
3. Logistics Engineering Handbook, editor G. Don Taylor, CRC Press Taylor & Francis Group, 2008.
4. Pavlović, I., Kvantitativni modeli i metode u poslovnim odlučivanju, Mostar-Dubrovnik, 2015.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Course materials available on the e-learning platform – Merlin	web	20
Backović, M., Vuleta, J., Popović, Z., Ekonomsko matematički metodi i modeli, Ekonomski fakultet Univerziteta u Beogradu, (udžbenik i zbirka zadataka), 2020.	5	20

### 1.13. Quality Assurance

The quality of education is monitored in accordance with the ISO 9001 system and aligned with European standards and guidelines for quality assurance, implemented at the Faculty of Maritime Studies in Rijeka. Exam pass rate analysis is conducted annually, and student surveys are carried out once per semester.





### 3.2. Course description

Generic information		
Head of Course	Jasmin Čelić, PhD Neven Grubišić, PhD	
Course	Intelligent Transportation Systems	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+0+15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The main objectives of this course are to acquire fundamental knowledge in the field of Intelligent Transport Systems (ITS) and to understand the basic principles and techniques used in the design and operation of modern systems.

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

Upon passing the exam, students will be able to:

1. Identify the fundamental principles on which ITS is based.
2. Compare network-based control principles and choose the optimal solution.
3. Evaluate the development of ITS.
4. Assess and select appropriate procedures for ITS implementation in transport infrastructure.
5. Justify the relevance and benefits of ITS implementation.
6. Recommend telematics solutions for transport systems.
7. Compare the operating principles of electronic systems in transport entities.
8. Review prerequisites for development and provide recommendations for ITS service deployment.

##### 1.4. Course Outline

Introduction to Intelligent Transport Systems. Standards and norms. Basics of systems theory and cybernetics. Physical and logical architecture of ITS. Traffic modelling. Communications in ITS. Expert systems and AI applications in transport. Intelligent navigation systems. ITS and control systems. Expert systems in maintenance. Diagnostics in ITS.

##### 1.5. Modes of Instruction

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Lectures               | <input checked="" type="checkbox"/> Practical work         |
| <input checked="" type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises                         | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning                        | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work                        | <input type="checkbox"/> Other _____                       |

##### 1.6. Comments

##### 1.7. Student Obligations



1<sup>st</sup> preliminary exam, 2<sup>nd</sup> preliminary exam, research task and presentation, final exam

### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendanc	1,5	Class participation	0,5	Seminar paper	1	Experiment	
Written exam	0,5	Oral exam	0,5	Essay		Research	0,5
Project		Continuous Assessment	0,5	Presentation		Practical work	
Portfolio							

### 9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

*The procedure for evaluating the acquired learning outcomes is carried out according to the Regulations on Studies of the University of Rijeka and the Regulations on Studying at the Faculty of Maritime Studies in Rijeka in the following way:*

- 70% of the acquired learning outcomes are evaluated through continuous knowledge assessment during classes:  
through the 1<sup>st</sup> preliminary exam – learning outcomes 1-4 (25%), 2<sup>nd</sup> preliminary exam – learning outcomes 5-8 (25%), presentation of the research task (seminar) – learning outcomes 1-8 (20%); in each preliminary exam, the student must achieve a minimum of 50% of the points, while the presentation of the research task is evaluated based on the developed assessment criteria;
- 30% of the acquired learning outcomes (1-8) are evaluated in the final part of the exam, and in order to pass the final exam, the student must achieve a minimum of 50% of the points;
- the final ECTS grade is defined based on the achieved total % of knowledge, skills and competences and the numerical grade after the final/remedial exam as follows:
  - excellent grade (5) corresponds to grade A on the ECTS scale and a success rate of 90 to 100%,
  - very good grade (4) corresponds to grade B on the ECTS scale and a success rate of 75 to 89.9%,
  - good grade (3) corresponds to grade C on the ECTS scale and a success rate of 60 to 74.9%,
  - satisfactory grade (2) corresponds to grade D on the ECTS scale and a success rate of 50 to 59.9%,
  - unsatisfactory grade (1) corresponds to grade F on the ECTS scale and a success rate of 0 to 49.9%.

*Examples of learning outcome evaluations in relation to the set learning outcomes are:*

1. List and explain the phases of the ITS lifecycle. (LO #1)
2. List and describe the four types of guidance. (LO #2)
3. What architecture includes the physical, logical and communication views? (LO #3)
4. What are the basic steps in the requirements discovery process? (LO #4)
5. How can the level of service (QoS) of intelligent roads be measured? (LO #5)
6. What does ITS vehicle adaptation involve? (LO #6)
7. List the types of sensors. (LO #7)
8. What are the visible benefits of ITS? Explain. (LO #8)

#### 1.10. Main Reading

1. Teaching material available on the Merlin e-learning system (<https://moodle.srce.hr>)
2. Bošnjak, I. (2006). Intelligent Transport Systems 1, Faculty of Transport Sciences, Zagreb, Croatia
3. Williams, B. (2008.). Intelligent Transport Systems Standards, Artech House, Boston, USA.

#### 1.11. Recommended Reading

- Ćelić, J., Mandžuka, B., Tomas, V., Tadić, F. (2024.). Driver-centric urban route planning: Smart search for parking, Sustainability 16 (2), 856.
- Grupa autora. (2000.). Intelligent Transportation Primer, Institute of Transportation Engineers, Washington, USA.
- Chen, Y., Li, L. (2013.). Advances in Intelligent Vehicles, Elsevier, Academic Press.
- Zilouchian, A., Jamshidi, M. (2001.). Intelligent Control Systems Using Soft Computing Methodologies,



CRC Press, London, UK.

- Gupta, M., Sinha, N. K. (1995.). Intelligent Control Systems - Concept and Applications, IEEE Press, Piscataway NJ, USA.
- Internet:  
<http://local.iteris.com/arc-it/>  
<http://its.dot.gov/>  
<https://www.itsa.org/technology-scan-assessments>  
<https://www.etsi.org/technologies/>  
<https://www.pcb.its.dot.gov/eprimer/default.aspx>  
<https://www.ieee-itss.org/its-transactions>

**1.12. Number of Main Reading Examples**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Bošnjak, I. (2006). Intelligent Transport Systems 1, Faculty of Transport Sciences, Zagreb, Croatia	10	40
Williams, B. (2008.). Intelligent Transport Systems Standards, Artech House, Boston, USA.	10	40

**1.13. Quality Assurance**

The quality of studies is constantly monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An analysis of exam taking is prepared annually, and a survey among students is conducted once a semester.

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 3.2. Course description

Generic information		
Head of Course	Dario Ogrizović, PhD	
Course	Artificial intelligence	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2nd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*Acquiring basic theoretical and practical knowledge about artificial intelligence and the application of advanced algorithms.*

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

1. Explain the historical development and theoretical foundations of artificial intelligence.
2. Define and analyse problem-solving methodology and uncertainty modelling.
3. Analyse and classify machine learning.
4. Classify and evaluate artificial neural networks.
5. Define and analyse generative artificial intelligence.
6. Create basic artificial intelligence algorithms and apply them to simpler problems.
7. Create and apply artificial intelligence to optimization problems.
8. Critically evaluate the social aspects of artificial intelligence.

##### 1.4. Course Outline

Historical development of artificial intelligence. Theoretical foundations of artificial intelligence. Problem solving methodology. Knowledge-based information system. Uncertainty modelling. Machine learning. Supervised, unsupervised and supported learning. Deep learning. Artificial neural networks. Generative artificial intelligence. Large language models. Nature-inspired optimization algorithms. Support vector method. Programming tools TensorFlow, H2O.AI, Deeplearning4j, Google ML Kit, Apache Mahout, voice assistants (ALEXA, Google Assistant, Siri and Cogito). Application of artificial intelligence, optimization and planning of real problems in maritime and transport. Social aspects of artificial intelligence.

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network    |
| <input checked="" type="checkbox"/> Exercises   | <input checked="" type="checkbox"/> Laboratory     |
| <input checked="" type="checkbox"/> E-learning  | <input type="checkbox"/> Mentorship                |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____               |

##### 1.6. Comments



1.7. Student Obligations

1. Attendance and activity in class
2. Attendance and activity in laboratory exercises
3. Project
4. Written exam (midterms and exam)

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project	1	Continuous Assessment	1	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The process of evaluation of the acquired learning outcomes takes place during continuous assessments (through class activities (10%), preparation and presentation of a project (20%), 2 midterm exams - total 40%) and at the final part of the exam (30%). A minimum of 50% of points must be achieved in individual knowledge assessments.

Examples of evaluating learning outcomes in relation to the learning outcomes that are set are:

1. Explain the historical development and theoretical foundations of artificial intelligence.
2. Define and analyse problem-solving methodology and uncertainty modelling.
3. Analyse and classify machine learning.
4. Classify and evaluate artificial neural networks.
5. Define and analyse generative artificial intelligence.
6. Create basic artificial intelligence algorithms and apply them to simpler problems.
7. Create and apply artificial intelligence to optimization problems.
8. Critically evaluate the social aspects of artificial intelligence.

### 1.10. Main Reading

1. Norvig P. Artificial Intelligence: A Modern Approach, Pearson, 2021.
2. Alpaydin, E. 2021. Introduction to Machine Learning, fourth edition, MIT Press.
3. Study materials available at e-learning platform (<https://moodle.srce.hr>)

### 1.11. Recommended Reading

1. Chowdhary, K.R. 2020. Fundamentals of Artificial Intelligence, Springer-Nature.
2. Luger, G.F. 2005. Artificial Intelligence: Structures and Strategies for Complex Problem Solving, Addison-Wesley

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Norvig P. Artificial Intelligence: A Modern Approach, Pearson, 2021.	3	40
Alpaydin, E. 2021. Introduction to Machine Learning, fourth edition, MIT Press.	5	40

### 1.13. Quality Assurance

The quality of study is constantly monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An analysis of the exams is made annually and a student survey is conducted once a semester. All data, including exam, written work and assessment, are at all times public data for all students who have enrolled in the course (on the e-learning platform).



### 3.2. Course description

Generic information		
Head of Course	Biserka Rukavina, Ph.D.	
Course	EU Transport Law	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+ 0 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

Students should become familiar with legal standards governing transport activities at EU level covering all branches transport, access to the transport services market, social aspects of transport, transport safety and environmental protection.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

After passing the exam, students will be able:

1. single out and interpret the basic principles of the EU Common Transport Policy.
2. to categorize the basic principles of the development of EU transport systems.
3. to present the EU acquis in the fields of road, rail, transport and air Traffic.
4. to interpret the importance of the right of access to the transport services market and explain the social aspects of traffic.
5. to analyze new tendencies in the development of the European transport safety and environmental protection system.
6. to compare and argue the compliance of Croatian law with the *acquis communautaire* in the field of transport policy.

##### 1.4. Course Outline

Basic principles of the EU's common transport policy; basic principles for the development of EU transport systems; "White Paper" on the Common Maritime Policy; EU road transport acquis, overview of conventions and agreements governing road activities (Customs Convention on the International Transport of Goods under the auspices of the TIR carnet, the Convention on international transport of goods by road (CMR), the Convention on the International Transport of Dangerous Goods (ADR), Convention on the Contract for the International Road Transport of Passengers and Luggage (CVR); Overview of EU transport policy documents in the field of railways - 'White Paper', 'Rail plan', pan-European corridors, secondary legal sources of European law relating to the area of rail traffic. Maritime transport policy basics - safety of navigation, improvement of surveillance and control systems responsible for pollution of the marine environment. Air transport policy basics, legal sources of EU aviation law; Air navigation services; air protection traffic; protection against aircraft noise; Aviation safety inspection. Compliance of Croatian law with *acquis communautaire* in the field of transport policy.





1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Presentation					
1.6. Comments							
1.7. Student Obligations							
<p>a) Students' main obligations are active course attendance and they are required to pass two tests as continuous assessment during the term.</p> <p>b) As a prerequisite for the final exam, students must score at least 35 out of a possible 70 points (50%) during the classes.</p> <p>c) Students must score at least 15 out of a possible 30 points on final exams (50%).</p>							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam						
<p>The process of evaluation of the acquired learning outcomes takes place during continuous assessments through 2 midterm examinations (70 %) and at the final part of the exam (30 %).</p> <p>Examples of Assessment of Learning Outcomes:</p> <ol style="list-style-type: none"> <li>Specify the basic principles of the EU Common Transport Policy.</li> <li>What are the principles of development of EU transport systems?</li> <li>Explain the EU acquis in the fields of road, rail, transport and air transport.</li> <li>Specify the importance of access rights to the transport services market and explain the social aspects of transport.</li> <li>Describe new tendencies in the development of the European transport safety and environmental protection system.</li> <li>State the level of compliance of Croatian law with the <i>acquis communautaire</i> in the field of transport policy.</li> </ol>						
1.10. Main Reading						
<ol style="list-style-type: none"> <li>Radionov, Nikoleta, i dr., <i>Europsko prometno pravo</i>, Pravni fakultet Sveučilišta u Zagrebu, Zagreb, 2011.</li> </ol>						
1.11. Recommended Reading						
<ol style="list-style-type: none"> <li>Treaty Establishing the European Community</li> <li>Treaty on European Union, OJ C 191/92.,</li> <li>Treaty of Amsterdam amending the Treaty on Europe</li> </ol>						
1.12. Number of Main Reading Examples						
<table border="1"> <thead> <tr> <th>Title</th> <th>Number of examples</th> <th>Number of students</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Title	Number of examples	Number of students			
Title	Number of examples	Number of students				



Radionov, Nikoleta, i dr, Europsko prometno pravo, Pravni fakultet Sveučilišta u Zagrebu, Zagreb, 2011.		40
<b>1.13. Quality Assurance</b>		
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.		



### 3.2. Course description

Generic information		
Head of Course	Siniša Vilke, PhD	
Course	Land Transportation System Planning	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the case is to provide fundamental knowledge of planning and design of transport infrastructure facilities for roads, railways and aviation.

##### 1.2. Prerequisites for Course Registration

##### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Analyze and connect the methodology, procedures and criteria of traffic planning and design of land infrastructure facilities.
2. Analyze the management of road and railway infrastructure.
3. Classify the chronology of land transport infrastructure design through the development of general, conceptual and main designs.
4. Analyze the procedures for preparing planning and project documentation for the construction of road transport infrastructure facilities.
5. Analyze the preparation of project documentation for the construction of railway transport infrastructure facilities.
6. Analyze and classify traffic elements in the construction design of airports.
7. Explain the regulations on the planning and construction of land transport infrastructure facilities.
8. Identify and connect traffic elements in the construction design of road roads.
9. Classify and compare traffic elements in the construction design of railway roads.
10. Develop and present a research task on a given road or rail traffic solution.

##### 1.4. Course Outline

The basic characteristics of the elements of land infrastructure facilities. Transportation planning and design. Categorization of roads and road facilities, urban roads and intersections. Planning, design, execution and management of road infrastructure. Urban roads and intersections. Stationary traffic. Categorization of railways and railway facilities. Design elements of railway infrastructure. Planning and design of aviation infrastructure.

##### 1.5. Modes of Instruction

☒ Lectures

☐ Seminars and workshops

☒ Practical work

☐ Multimedia and Network



		<input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> other _____	
1.6. Comments					
1.7. Student Obligations					
Preparation of the study paper, presentation of the study paper, 1st colloquium, 2nd colloquium.					
1.8. Assessment of Learning Outcomes					
Course attendance	1,5	Class participation		Seminar paper	
Written exam		Oral exam	1	Essay	
Project		Continuous Assessment	1,5	Presentation	
Portfolio					
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam					
<p>The procedure of assessment of acquired learning outcomes is carried out by the Study Regulations of the University of Rijeka and the Study Regulations at the Faculty Maritime Studies in Rijeka as follows:</p> <ul style="list-style-type: none"> <li>- 70% of the acquired learning outcomes are assessed through continuous assessment during classes within the 1st exam (25%), 2nd exam (25%), and through the preparation and presentation of a research task (20%);</li> <li>- 30% of the acquired learning outcomes are assessed in the final part of the exam.</li> </ul> <p>Examples of learning outcome assessment in relation to the set learning outcomes are:</p> <ol style="list-style-type: none"> <li>1. Explain the methodology, procedures and criteria for traffic planning and design of land infrastructure facilities.</li> <li>2. Explain the basic principles and procedures for road infrastructure management.</li> <li>3. Explain the activities of designing railway transport infrastructure using the example of the content of the general project.</li> <li>4. Describe the preparation of planning and project documentation for the construction of road infrastructure facilities.</li> <li>5. Explain the basic legal provisions on the planning and construction of land transport infrastructure facilities.</li> <li>6. Identify traffic and construction elements in the given example of a road project.</li> <li>7. Identify traffic and construction elements in a concrete example of a railway project.</li> <li>8. Develop and present a solution for a selected road / railway junction.</li> </ol>					
1.10. Main Reading					
<ol style="list-style-type: none"> <li>1. Blašković Zavada, J.: Osnove prometne infrastrukture, Fakultet prometnih znanosti, Zagreb, 2019.</li> <li>2. Legac., I.: Cestovne prometnice I, Fakultet prometnih znanosti, Zagreb, 2006.</li> <li>3. Stipetić, A.: Gornji ustroj željezničkoga kolosijeka, Fakultet prometnih znanosti, Zagreb, 2008.</li> <li>4. Pavlin, S.: Aerodromi I, Prometni fakultet Zagreb, 2002.</li> <li>5. Transport Development Strategy of the Republic of Croatia for the period 2017 to 2030 (Official Gazette 84/17).</li> <li>6. Teaching material for the e-course available on the LMS Merlin (<a href="https://moodle.srce.hr">https://moodle.srce.hr</a>)</li> </ol>					



**1.11. Recommended Reading**

1. Vilke, S.; Tadić, F.; Čelić, J.; Debelić, B.: Decision support system in urban traffic management, ODS 2022 – International Conference on Optimization and Decision Sciences, 2022.
2. Vilke, S.; Petrović, I.; Tadić, F.: Evaluation and Selection of the Railroad Route between Rijeka and Zagreb, Applied Sciences, 12, (2022), 3, 1306.
3. Vuchic, V., R.: Urban Transit Systems and Technology, John Wiley & Sons, Inc., Hoboken, New Jersey, 2007.
4. Physical Planning Act (Official Gazette 153/13, 65/17).
5. Building Act (Official Gazette 153/13, 20/17, 39/19).
6. Laws and implementing regulations in the field of transport infrastructure, Zagreb, Official Gazette, Republic of Croatia.

**1.12. Number of Main Reading Examples**

Title	Number of examples	Number of students
1. Blašković Zavada, J.: Osnove prometne infrastrukture, Fakultet prometnih znanosti, Zagreb, 2019.	5	30
2. Cestovne prometnice I, Fakultet prometnih znanosti, Zagreb, 2006.	5	30
3. Stipetić, A.: Gornji ustroj željezničkoga kolosijeka, Fakultet prometnih znanosti, Zagreb, 2008.	5	30
4. Pavlin, S.: Aerodromi I, Prometni fakultet Zagreb, 2002.	3	30
5. Transport Development Strategy of the Republic of Croatia for the period 2017 to 2030 (Official Gazette 84/17).	online	30
6. Teaching material for the e-course available on the LMS Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	-	30

**1.13. Quality Assurance**

The quality of studies is monitored according to the system ISO 9001 and according to the European standards and guidelines for quality assurance introduced at the Faculty Maritime Studies in Rijeka. Once a year the passage results are analyzed and appropriate measures are taken, and once a semester a survey is conducted among the students.



### 3.2. Course description

Generic information		
Head of Course	Đani Mohović, PhD	
Course	Risk management in shipping	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	45+0+15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*The aim of the course is to introduce students to the theoretical and practical basis for maritime risk analysis. Detailed introduction and analysis of specific factors that influence risk identification. Introduction to risk identification methods. Definition of acceptable risk and measures to reduce maritime risk. Ability to identify risks using specific examples.*

##### 1.2. Prerequisites for Course Registration

*No special requirements for enrolling in the course.*

##### 1.3. Expected Learning Outcomes

*It is expected that after passing the exam, students will be able to:*

- 1. apply theoretical and practical foundations for maritime risk analysis*
- 2. identify and analyze specific factors that influence risk determination*
- 3. select and apply methods for risk determination*
- 4. select an appropriate method and assess acceptable risk*
- 5. select options and apply common measures for maritime risk reduction*
- 6. determine risk on specific examples*

##### 1.4. Course Outline

*The risk concept. What is an accident? Risk picture. Accident statistics. Preventive and ameliorating measures. Safety management – monitoring of the risk level. Risk objectives and data. Statistical analysis of safety oriented decision alternatives. Maritime traffic models. Probability of grounding and collision. Risk analysis methods: Hazard analysis, FTA, ETA, FMECA, HazOp. Formal safety assessment (FSA). Cost-benefit analysis of safety measures. Analysis and modelling of ships casualties. Cost-benefit analysis of controls. Analysis and modelling of ship accidents. Human reliability and error mechanisms. Catastrophe behaviour, evacuation and rescue. Training, drills and human-machine simulation. Regulation and official control of maritime safety. National and international control authorities. Safety and quality management. ISO standards. Auditing. Safety case.*

##### 1.5. Modes of Instruction

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Lectures               | <input type="checkbox"/> Practical work         |
| <input checked="" type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises                         | <input type="checkbox"/> Laboratory             |
| <input type="checkbox"/> E-learning                        | <input checked="" type="checkbox"/> Mentorship  |
| <input checked="" type="checkbox"/> Field work             | <input type="checkbox"/> Other _____            |



1.6. Comments

1.7. Student Obligations

*Regular class attendance, continuous learning, active class participation, group work on risk analysis examples, preparing and writing seminars, presenting research in seminars, studying and taking the final exam (oral).*

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	2	Class participation		Seminar paper	1.5	Experiment	
Written exam		Oral exam	1.5	Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio		Final exam					

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.





### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

During the course, the quality of the seminar paper, mastery of the material and the seminar presentation are assessed. After the course, the oral exam is assessed. The evaluation percentage is 70% in class and 30% in the final exam (according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka).

Knowledge assessment during the course:

Through mentoring work when writing the seminar paper and during the presentation of the seminar paper, where knowledge of the theoretical foundations and their application in the seminar paper are assessed.

Final exam:

The final exam (oral exam) tests the completeness of theoretical knowledge in the field of Maritime Risk Management - it is necessary to achieve at least 50% of the required theoretical knowledge.

### 1.10. Main Reading

1. Authorized lecture, Ph.D.sc. Đani Mohović, Ph.D. sc. Robert Mohović, Rijeka, 2011/2012..
2. "Manging risk in shipping"- The Nautical Institute, London, 1999.
3. "Safety Management and Risk Analysis" – Svein Kristiansen, Butterworth-Heinemann, 2004.

### 1.11. Recommended Reading

1. "Risk and reliability in marine technology"- COMETT Programme, Wegemt, 1993.
2. "Good practice in risk assessment and risk management 1"- Hazel Kemshall and Jacki Pritchard, Bristol, Jessica Kingsley Publ., 1996.
3. "Acceptable risk"- Baruch Fischhoff, Cambridge, Cambridge University Press, 1981.
4. "General Security Risk Assessment"- ASIS International Guidelines Commission, Alexandria, Virginia, 2003.
5. "Procjena opasnosti za opasne stvari", Janeš V., Čavrak B., ZIRS, Intergrafika, Zagreb 1999.
6. "Risk analysis and its applications"- David B. Hertz and Howard Thomas, Chichester: Wiley, 1983.
7. "Quantitative risk analysis: a guide to Monte Carlo simulation modelling" – David Vose, Chichester: John Wiley, 1996.
8. "The risk ranking technique in decision making"- John. C. Chicken and Michael R. Hayns, Oxford: Pergamon Press, 1989.
9. "Reliability, maintainability and risk", Smith J. David, 2001.
10. "Offshore Risk Assessment", Vinnem J. E., Trondheim, Kluwer Academic Publisher, 1999.
11. "Metode procjene i upravljanja rizikom u procesnoj industriji", Enconet International, Zagreb, 1999.
12. Mario Šikić, Andro Jančić, Mihovil Jureško, Đani Mohović, „Analysis of Risks Arising from the Use of Autonomous Vessels“, pregledni rad, Pomorski zbornik 63 (2023), 63-74

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
1. Authorized lecture, Ph.D.sc. Đani Mohović, Ph.D. sc. Robert Mohović, Rijeka, 2011/2012.	unlimited	5
2. Manging risk in shipping- The Nautical Institute, London, 1999.	1	
3. Safety Management and Risk Analysis – Svein Kristiansen, Butterworth-Heinemann, 2004.	2	

### 1.13. Quality Assurance



*Sveučilište u Rijeci • University of Rijeka*

Trg braće Mažuranića 10 • 51 000 Rijeka • Croatia

T: (051) 406-500 • F: (051) 216-671; 216-091

W: [www.uniri.hr](http://www.uniri.hr) • E: [ured@uniri.hr](mailto:ured@uniri.hr)

*The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.*



### 3.2. Course description

Generic information		
Head of Course	Svjetlana Hess, PhD	
Course	Queueing Theory	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30+0+10

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The main objective is to equip students with the skills to apply queueing theory by mastering techniques and obtaining solutions—both manually and using computer support—and conducting comprehensive result analyses that lead to practical applications in planning real service processes in transport, service, and logistics sectors.

##### 1.2. Prerequisites for Course Registration

None.

##### 1.3. Expected Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. State the basic principles and theoretical foundations of queueing theory.
2. Recognize specific problems in a given service activity and determine criteria and decision-making methods.
3. Collect data, define basic queue parameters, and identify the appropriate queue type.
4. Solve illustrative problems for various types of queues using the appropriate formulas.
5. Choose the optimal solution based on set criteria and interpret the results as well as the interdependencies of indicators.
6. Use computer support (QM for Windows) to obtain results

##### 1.4. Course Outline

Definition and types of queues (mass service systems). Basic parameters and performance indicators of mass service systems. Analysis of indicator interdependencies. Impact of system parameters on service efficiency. Waiting cost models. Case studies of different queue types. Detection of bottlenecks and ensuring service flow to support sustainable transport with a focus on mobility. Emphasis on applying queueing theory methods to real-world problems in transport and logistics where queue optimization is required. Software: QM for Windows.

##### 1.5. Modes of Instruction

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Lectures               | <input checked="" type="checkbox"/> Practical work         |
| <input checked="" type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises                         | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning                        | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work                        | <input type="checkbox"/> Other _____                       |

##### 1.6. Comments



1.7. Student Obligations

Attendance (minimum 70%), midterm exams, seminar paper, and final exam.

1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1.3	Class participation		Seminar paper	1.3	Experiment	
Written exam	0.7	Oral exam		Essay		Research	
Project		Continuous Assessment	2.7	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

#### Evaluation Process

During the course, a maximum of 70% of grade points can be earned through midterm exam and seminar work (learning outcomes: 2–6), and 30% through the final exam (learning outcomes: 1, 2, and 5). The final exam assesses the comprehensiveness of theoretical knowledge and understanding of specific topics in queueing theory and their application in real transport and logistics scenarios. Students must earn at least 35% of total grade points to sit for the final exam and at least 50% to pass.

Examples of evaluation by learning outcome:

1. State theoretical foundations of a type of queue.
2. Choose and describe a hypothetical problem in a transport or service activity, and identify potential optimization criteria considering recognized bottlenecks.
3. For a practical problem, describe the data collection method, identify input parameters, and determine the appropriate queue type to find an optimal solution.
4. Solve a queueing problem using appropriate formulas for the queue type.
5. Interpret the solution based on the set criteria, analyze interdependencies of results, and explain the impact of input parameters on system efficiency.
6. Use QM for Windows to solve a queueing problem.

#### 1.10. Main Reading

1. Course materials available on the e-learning platform Merlin (<https://moodle.srce.hr>)
2. Zenzerović, Z., Teorija redova čekanja, Stohastički procesi II. dio, autorizirana predavanja, Pomorski fakultet u Rijeci, Rijeka, 2003.

#### 1.11. Recommended Reading

1. Babeli, K., Hess, S., Hess, M., "Capacity utilization of the container terminal as multiphase service system", *European Transport*, 86(4), 2022.
2. Hess, S., Grbčić, A., "The multiphase queueing system of the Rijeka airport", *Pomorstvo*, 33(2), 2019.
3. Barković, D., Operacijska istraživanja, Sveučilište u Osijeku Ekonomski fakultet, Osijek, 2001.
4. Queueing Theory Books Online (<http://web2.uwindsor.ca/math/hlynka/qonline.html>)
5. Sztrik, J., *Basic Queueing Theory: Foundations of System Performance Modeling*, 2016.  
[https://irh.inf.unideb.hu/~jsztrik/education/16/SOR\\_Main\\_Angol.pdf](https://irh.inf.unideb.hu/~jsztrik/education/16/SOR_Main_Angol.pdf) or  
<https://www.freetechbooks.com/basic-queueing-theory-foundations-of-system-performance-modeling-t1083.html>

#### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Course materials on e-learning platform – Merlin	web	30
Zenzerović, Z., Teorija redova čekanja, Stohastički procesi II. dio, autorizirana predavanja, Pomorski fakultet u Rijeci, Rijeka, 2003.	10	30

#### 1.13. Quality Assurance

The quality of education is monitored in accordance with the ISO 9001 system and aligned with European standards and guidelines for quality assurance, implemented at the Faculty of Maritime Studies in Rijeka. Exam pass rate analysis is conducted annually, and student surveys are carried out once per semester.

### 3.2. Course Description

Generic information		
Head of Course	Igor Vio, PhD.	
Course	Environmental Law	
Study Programme	Logistics and Management in Marine Industry and Transport	
Type of Course	Elective (Deactivated)	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS Coefficient of Student Workload	4
	Number of Hours (L+E+S)	30 + 0 + 0
<b>1. GENERAL COURSE DESCRIPTION</b>		
<i>1.1. Course Objectives</i>		
Students should become familiar with international, regional and national rules and regulations regulating the environment. This course will provide an overview of major sources of law and address the variety of regulatory tools and concepts that can be used to prevent environmental harm, particularly to marine spaces. Course objectives are to evaluate the assumptions and justifications when choosing any regulatory approach such as environmental justice and public welfare.		
<i>1.2. Prerequisites for Course Registration</i>		
none		
<i>1.3. Expected Learning Outcomes</i>		
<p>After passing the exam, students will be able:</p> <ol style="list-style-type: none"> <li>1. Define and interpret the basic principles of environmental law.</li> <li>2. Define and describe the basic principles of the development of international environmental law.</li> <li>3. explain the sources of environmental law in the legal order of the Republic of Croatia</li> <li>4. Describe and analyze new tendencies in the development of environmental protection and conservation rights.</li> <li>5. Identify and analyze the most important international treaties dedicated to environmental protection and conservation.</li> <li>6. Describe and argue the compliance of Croatian law with <i>acquis communautaire</i> in the field of environmental law.</li> </ol>		
<i>1.4. Course Outline</i>		
<p>Introductory and basic environmental law issues. The concept of environmental law and its place in the legal system. Basic principles of environmental law. Sources of environmental law in the legal order of the Republic of Croatia (Constitution of the Republic of Croatia, Declaration on environmental protection in the Republic of Croatia, environmental laws and other environmental regulations as sources of environmental law in the Republic of Croatia, bylaws as sources of environmental law). International legal aspects of protection and conservation environmental. Development of international environmental law. The</p>		

most important international treaties dedicated to the protection and preservation of environment (environmental protection, protection of the marine environment, protection of international water flows, protection of biological diversity, cross-border traffic of hazardous waste).

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	X Multimedia and Network
	X Exercises	<input type="checkbox"/> Laboratory
	X E-learning	<input type="checkbox"/> Mentorship
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____

1.6. Comments

### 1.7. Student Obligations

Students enrolled at the Faculty of Maritime Studies are expected to observe the code of conduct required by the academic institution, and regularly attend lectures and practical work sessions.

### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,0	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	2,0	Essay		Research	
Project		Continuous Assessment	1,0	Presentation		Practical work	
Portfolio							

### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Through continues assessment student achieves up to 70% (Learning Outcomes from 1 to 6), while with the written Final Exam (Learning Outcomes from 1 to 6) up to 30% of total Score.

Examples of Assessment of Learning Outcomes:

1. Specify the basic principles of environmental law.
2. Describe the basic principles of the development of international environmental law.
3. Define sources of environmental law in the legal order of the Republic of Croatia.
4. Explain new tendencies in the development of environmental protection and conservation rights.
5. What are the most important international treaties dedicated to protecting and preserving the environment.
6. Indicate the degree of compliance of Croatian law with the *acquis communautaire* in the field of environmental law

### 1.10. Main Reading

O. Lončarić-Horvat, L. Cvitanović, I. Gliha, T. Josipović, D. Medvedović, J. Omejec, M. Seršić, *Pravo okoliša*, Zagreb, 2003.

Course teaching material available on e-learning system - Merlin (<https://moodle.srce.hr>)

### 1.11. Recommended Reading

Zakon o zaštiti okoliša, N.N. 80/13, 153/13, 75/15., 12/18., 118/18.

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.





<b>1.12. Number of Main Reading Examples</b>		
<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
O. Lončarić-Horvat, L. Cvitanović, I. Gliha, T. Josipović, D. Medvedović, J. Omejec, M. Seršić, Pravo okoliša, Zagreb, 2003.	20	40
Course teaching material available on e-learning system - Merlin	Web	40
<b>1.13. Quality Assurance</b>		
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European quality assurance implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the student pass rate and adopt appropriate measures.		



### 3.2. Course description

Generic information		
Head of Course	Edvard Tijan, PhD	
Course	Inventory Management	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	4 <sup>th</sup> semester
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+15+0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

*Inventory availability is the most important aspect of customer service, and inventory costs are one of the most important items on a company's balance sheets. This course focuses on understanding how to effectively provide the supplies needed for good customer service, while reducing inventory costs due to poor supply chain management. Students should learn inventory-related processes including inventory stratification, forecasting, and replenishment, and contribute to the development and application of inventory management processes and procedures.*

##### 1.2. Prerequisites for Course Registration

None

##### 1.3. Expected Learning Outcomes

1. Establish interconnection of the basic elements of storage systems, including technology, processes and resources
2. Identify key features of storage processes with regard to their performances and security
3. Analyze the impact of different stock management strategies on company's financial performance.
4. Classify the stocks according to types and values and recommend optimal management strategies like ABC analysis.
5. Assess the current state of stocks with help of analytic tools and determine optimal quantities of orders according to the default criteria.
6. Measure the performance of storage systems by using key performance indicators (ex. Delivery rate, stock accuracy) with goal of improving the operational efficiency
7. Propose methods of stock optimization which secures fulfilment of buyers orders and minimization of costs.

##### 1.4. Course Outline

##### 1.5. Modes of Instruction

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Lectures    | <input checked="" type="checkbox"/> Practical work         |
| <input type="checkbox"/> Seminars and workshops | <input checked="" type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises   | <input type="checkbox"/> Laboratory                        |
| <input type="checkbox"/> E-learning             | <input type="checkbox"/> Mentorship                        |
| <input type="checkbox"/> Field work             | <input type="checkbox"/> Other _____                       |

##### 1.6. Comments



### 1.7. Student Obligations

Regular attendance at classes and solving tasks assigned to work at home, work on the e-learning system. Checking knowledge through colloquia and tests on exercises.

### 1.8. Assessment<sup>1</sup> of Learning Outcomes

Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment and evaluation include class activity, two colloquia and a final oral exam. Assessment is carried out in accordance with the applicable University and Faculty Regulations on study. The student can achieve up to 70% of the grade during classes, and the remaining 30% can be achieved in the final exam. At each knowledge test, the student must master at least 50% of the learning outcomes, i.e. achieve at least 50% of possible points. Students independently solve tasks and answer test questions during classes and through the e-learning system after each lecture.

Examples of evaluation:

1. Indicate the basic elements of storage system and examples for each group.
2. Identify processes when goods enter the storage
3. Suggest ways to improve stocks based on the storage case study.
4. Classify the stocks based on a case study.
5. Calculate needed quantities of stocks of the good x for the next order, based on output data.
6. List the application of total supplies and write the formula for its calculation.
7. List the steps needed for stock optimization.

### 1.10. Main Reading

1. Teaching materials on the system for e-learning – Merlin
2. Čišić D., Upravljanje zalihama, Pomorski fakultet u Rijeci, 2017.
3. Bloomberg, LeMay, Hanna: Logistika, Mate 2006

### 1.11. Recommended Reading

1. Matthew J. Drake, Kathryn A. Marley, Tsan-Ming Choi (eds.): Handbook of EOQ Inventory Problems: Stochastic and Deterministic Models and Applications Springer 2014
2. Sven Axäter: Inventory Control Springer 2006

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Bloomberg, LeMay, Hanna: Logistika, Mate 2006	5	20
Čišić D., Upravljanje zalihama, Pomorski fakultet u Rijeci, 2017.	5	20
Teaching materials on the system for e-learning – Merlin	Unlimited	20

### 1.13. Quality Assurance

The quality of study is constantly monitored in accordance with the ISO 9001 system that is implemented in the Faculty of Maritime Studies. Annual evaluation is made also through surveys among students.



### Course description

Generic information			
Head of Course	Alen Jugović, PhD Dražen Žgaljić, PhD		
Course	Professional internship		
Study Programme	Logistics and Management in Maritime Industry and Transport		
Type of Course	Elective		
Year of Study	2nd		
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4	
	Number of Hours (L+E+S)	0 + 60 + 0	

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

The aim of the course is to provide students with insight into the business world and enhance their knowledge and professional competencies through practical work in companies within the maritime and transport sectors.

### 1.2. Prerequisites for Course Registration

None

### 1.3. Expected Learning Outcomes

After completing the course, the student will be able to:

- ❑ Use procedures in business processes related to maritime transport and logistics such as: planning and managing cargo handling processes, loading and stowing cargo, managing handling equipment and technological processes, booking ship space, performing the tasks of a shipping agent, completing and issuing electronic transport documents, managing a logistics warehouse, using electronic databases about ships and cargo, etc.
- ❑ Connect interdependent business processes in relation to the functionality of maritime, port, and transport systems, as well as transport logistics.
- ❑ Apply existing knowledge and skills acquired during their studies and improve their understanding of how to implement them in work processes, as well as assess the importance of individual competencies for the functionality of processes and success at work.

### 1.4. Course Outline

Through practical work in a company, the student becomes familiar with relevant tasks in the field of maritime transport and logistics, supplementing and verifying their professional knowledge related to the understanding of business processes.



1.5. Modes of Instruction	<input type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input checked="" type="checkbox"/> Mentorship
	<input checked="" type="checkbox"/> Field work	<input type="checkbox"/> Other _____
1.6. Comments		
1.7. Student Obligations		
1. Attendance at the workplace in a transport-related company 2. Preparation of a work log (daily work journal)		
1.8. Assessment <sup>1</sup> of Learning Outcomes		
Course attendance		Class participation
Written exam		Oral exam
Project		Continuous Assessment
Portfolio		
		Seminar paper
		Essay
		Presentation
		Experiment
		Research
		Practical work
		4

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



*1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam*

Student effort and work during the practical training in the company, as well as the presentation of their work and acquired knowledge and skills, are assessed and evaluated.

During the professional internship, students are required to keep a work log.

After completing their obligations at the company, students prepare a report on the completed professional internship.

The company provides the course coordinators with feedback on the student's work in the form of a completed evaluation form.

*1.10. Main Reading*

None

*1.11. Recommended Reading*

None

*1.12. Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

*1.13. Quality Assurance*

The quality of studies is monitored in accordance with the ISO 9001 system and European standards and guidelines for quality assurance (ESG), which are implemented at the Faculty of Maritime Studies in Rijeka. Once a year, pass rates are analyzed, and appropriate measures are taken.



### Course description

Generic information		
Head of Course	Vlado Frančić, PhD	
Course	International Maritime Safety System	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	Semester 2
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0

## 1. GENERAL COURSE DESCRIPTION

### 1.1. Course Objectives

The course objectives are to familiarize students with the fundamental characteristics, principles, and regularities of the International Maritime Safety System and marine pollution prevention, as well as its implementation in national legislation. The course provides a general overview of the international maritime safety system, based on international and national regulations, including industry standards. Furthermore, it explains the principles of ship surveys and the work of recognized organizations (ROs), certification procedures, and the procedures of port state control (PSC) inspections. Special emphasis is placed on the technology of decision-making and regulation at the political, technological, and implementation levels, as well as their impact on the business efficiency of shipping companies at both the international and national levels.

### 1.2. Prerequisites for Course Registration

It is expected that students possess at least basic knowledge about the International Maritime Organization (IMO) and associated requirements related to the safety of navigation.

### 1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Discuss the principles of the international maritime safety system.
2. Determine the legal framework related to maritime safety and marine environmental protection.
3. Present and outline the structure and functioning of the IMO.
4. Compare the most significant conventions related to maritime safety.
5. Establish the rights and obligations of recognized organizations (ROs).
6. Elaborate on the role of port state control inspections (PSC inspections).
7. Compare the procedures of ship survey and ship inspection (PSC inspections).
8. Present the procedures for inspection of foreign ships under the provisions of the Paris Memorandum of Understanding.
9. Assess the impact of safety measures on the economic performance of shipowners and shipping companies.

### 1.4. Course Outline



Principles of implementation and management of safety of navigation. Marine environment protection and the navigation safety system. The safety of navigation and marine environment protection and its position in respect of the international legal framework. International Maritime Organization (IMO) structure and organizational activities, goals. IMO Convention - organization, principles and activities. Assembly, committees, and sub-committees. The most important maritime conventions: SOLAS, COLREG, MARPOL, STCW, MLC 2006, SAR, TONNAGE, LOADLINE, AFS, BWM. Recommendations and codes adopted by the IMO. Implementation of the international sources related to the safety of navigation on the national level and the ship operators' level. Privileges and obligations of the state to ships sailing under the national flag (Flag State Control – FSC). Privileges, obligations and the role of the Recognized organizations (ROs). Classification societies and IACS. Harmonized System of Survey and Certification (HSSC).

Rights and obligations of the coastal state related to ships sailing under a foreign flag (Port State Control – PSC). Port State Control Regime. Regional cooperation. Rights and obligations and procedures according Paris Memorandum of Understanding. Future development of the safety of navigation. Influence and limitations of modern technological solutions. Influence of the safety measures to the business efficiency of the ship operators and ship-owners.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Practical work					
	<input type="checkbox"/> Seminars and workshops	<input checked="" type="checkbox"/> Multimedia and Network					
	<input checked="" type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory					
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship					
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____					
1.6. Comments							
1.7. Student Obligations							
Active participation in classes, with at least 70% attendance. Preparation of a research paper. Oral exam.							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	2	Essay		Research	1,5
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.





### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Through oral examination and seminar Paper (research article) students will achieve learning outcomes. On the final exam (oral exam) students need to present theoretical knowledge in the field of the international maritime safety system, where it is necessary to achieve a minimum of 50% of the required theoretical knowledge.

Examples of Assessment of Learning Outcomes:

1. Explain certification process and port state control inspection procedures (Learning Outcomes 4,5,6)
2. Determine the ship risk profile of the specific ship type according the rules of the Paris MoU. (Learning Outcomes 7, 8)

#### 1.10. Main Reading

1. Lecturer's notes published on official e-learning platform - Merlin (<https://moodle.srce.hr>)
2. Recognized Organizations Code, IMO.
3. Paris Memorandum of Understanding on Port State Control – latest annex.
4. Damir Zec, Sigurnost na moru, University textbook, Faculty of Maritime Studies Rijeka, 2001.

#### 1.11. Recommended Reading

1. Relevant IMO Resolutions, Circular letters, recommendations, Codes and circular letters) of IMO in electronic and paper form.
2. Original texts of the basic International Maritime Organization's conventions: SOLAS, MARPOL, MLC 2006, STCW.

#### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
1-3	Web	30
4	5	5

#### 1.13. Quality Assurance

The quality of studies is continuously monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An analysis of exam pass rates is conducted annually, and a student survey is carried out once per semester. For this course, all relevant data and information are available to all students via the course instructors' website/e-learning platform.



### 3.2. Course description

Opće informacije		
Head of Course	Siniša Vilke, PhD	
Course	Urban traffic and environment	
Study Programme	Logistic and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 0 + 15

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to provide fundamental knowledge of urban transport with the application of improvement aligned with modern requirements and criteria related to sustainability and environmental management.

##### 1.2. Prerequisites for Course Registration

##### 1.3. Expected Learning Outcomes

After completing and passing the course, students will be able to:

1. Assess and compare the requirements and specificities of public and individual urban transport.
2. Analyze the advantages, efficiency and development opportunities of public urban transport.
3. Classify conventional and innovative technologies in urban transport.
4. Analyze the relationship between urban transport, mobility and the environment.
5. Analyze the basic elements of the network of lines and the optimal structure of the network of lines of public urban transport.
6. Identify the consequences of applying a geographic information system (GIS) in urban transport.
7. Interpret the connection between public urban transport, mobility and transport sustainability.
8. Prepare and present a research task on a given transport technology or transport solution in an urban environment within the framework of independent research.

##### 1.4. Course Outline

The influence of transport on the development of the urban environment. The history of public transport. Efficiency of public transport. Technology of urban passenger transport. Aggregate and de-aggregate models of passenger behavior. Urban transport and public transport and mobility. Conventional modes of public transport. Paratransit. Innovative technologies in urban transport. Urban expansion, telecommuting and transport. Urban transport in the cities of the Republic of Croatia. Sustainability of urban transport. Traffic and urban pollution. Urban transport and energy. Urban public transport planning, mobility and sustainability. Planning of public transport network. Geographic information system (GIS) in urban transport. Weather characteristics of public transport. Cost estimation and funding sources for public transport. Policy objectives for public transport.

##### 1.5. Modes of

☒ Lectures

☒ Practical work



<i>Instruction</i>	<input checked="" type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network					
	<input type="checkbox"/> Exercises	<input type="checkbox"/> laboratory					
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship					
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____					
<i>1.6. Comments</i>							
<i>1.7. Student Obligations</i>							
<i>1.8. Assessment1 of Learning Outcomes</i>							
Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	0,5
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							
<i>1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam</i>							
<p>The procedure of assessment of acquired learning outcomes is carried out by the Study Regulations of the University of Rijeka and the Study Regulations at the Faculty Maritime Studies in Rijeka as follows:</p> <ul style="list-style-type: none"> <li>- 70% of the acquired learning outcomes are assessed through continuous assessment during classes within the 1st exam (25%), 2nd exam (25%), and through the preparation and presentation of a research task (20%);</li> <li>- 30% of the acquired learning outcomes are assessed in the final part of the exam.</li> </ul> <p>Examples of evaluating learning outcomes in relation to the set learning outcomes are:</p> <ol style="list-style-type: none"> <li>1. Interpret and compare the characteristics and specificities of public and individual urban transport.</li> <li>2. Explain the basic principles, advantages and efficiency of public urban transport.</li> <li>3. Explain the application of conventional and innovative technologies in urban transport using a specific example of a European city.</li> <li>4. Explain the possibility of developing public urban transport using a specific example of an urban environment.</li> <li>5. Explain the impact of urban transport on the environment.</li> <li>6. Explain the basic elements of the network of lines in the city of Rijeka</li> <li>7. Interpret the optimal structure of the network of public urban transport lines of the company "Autotrolej".</li> </ol>							
<i>1.10. Main Reading</i>							
<ol style="list-style-type: none"> <li>1. Štefančić, G.: Tehnologija gradskog prometa I, Fakultet prometnih znanosti, Zagreb, 2008.</li> <li>2. Štefančić, G.: Tehnologija gradskog prometa II, Fakultet prometnih znanosti, Zagreb, 2010.</li> <li>3. Teaching material for the e-course available on the LMS Merlin (<a href="https://moodle.srce.hr">https://moodle.srce.hr</a>)</li> </ol>							
<i>1.11. Recommended Reading</i>							
<ol style="list-style-type: none"> <li>1. Vilke, S.; Tadić, F.; Čelić, J.; Debelić, B.: Decision support system in urban traffic management, ODS 2022 – International Conference on Optimization and Decision Sciences, 2022.</li> <li>2. Vilke, S.; Mance, D.; Debelić, B.; Maslarić, M: Correlation between freight transport industry and economic growth – panel analysis of CEE countries, Promet–Traffic &amp; Transportation, 33 (2021), 4, 517 – 526.</li> <li>3. Genevieve, G., Hanson, S.: The Geography of Urban Transportation, Fourth Edition, The Guilford Press, New York, 2017.</li> </ol>							



4. Vuchic, V., R.: Urban Transit: Operations, Planning and Economics, John Wiley & Sons, Inc., Hoboken, New Jersey, 2005.
5. Black, A.: Urban Mass Transportation Planning, McGraw-Hill College, New York, 1995.
6. Črnjar, M.: Ekonimika i politika zaštite okoliša, Ekonomski fakultet, Rijeka, 2002.
7. Golubić, J.: Promet i okoliš, Fakultet prometnih znanosti, Zagreb, 1999.

**1.12. Number of Main Reading Examples**

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
1. Štefančić, G.: Tehnologija gradskog prometa I, Fakultet prometnih znanosti, Zagreb, 2008.	5	30
2. Štefančić, G.: Tehnologija gradskog prometa II, Fakultet prometnih znanosti, Zagreb, 2010.	5	30
3. Teaching material for the e-course available on the LMS Merlin ( <a href="https://moodle.srce.hr">https://moodle.srce.hr</a> )	-	30

**1.13. 1.13. Quality Assurance**

The quality of studies is monitored according to the system ISO 9001 and according to the European standards and guidelines for quality assurance introduced at the Faculty Maritime Studies in Rijeka. Once a year the passage results are analyzed and appropriate measures are taken, and once a semester a survey is conducted among the students.



### 3.2. Course description

Generic information		
Head of Course	Jakov Karmelić, PhD	
Course	International Shipping Business	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Elective	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+15+0

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The aim of the course is to provide students with a comprehensive insight and understanding of business in the international shipping markets (freight, new-building, sale and purchase, and demolition market) for different types of shipping (liner, dry bulk, tanker, passenger, and offshore).

Through this course, students will get acquainted with the goals and structure of the work of international maritime and trade organizations, the business of shipping companies and other entities in maritime trade, the structure of overseas trade, and the world fleet.

The course provides a scientific foundation for further specialized study in this multidisciplinary course.

During exercises, by studying specific cases, students will acquire basic knowledge of doing business in the international shipping industry.

##### 1.2. Prerequisites for Course Registration

##### 1.3. Expected Learning Outcomes

1. Explain the basic characteristics of each segment of the international shipping market.
2. Distinguish the basic principles, objectives, and working methods of international maritime and trade organizations.
3. Analyze and interpret the structure of world overseas trade by cargo types and ship types.
4. Explain the importance and role of maritime transport service entities in all types of shipping, especially shipowners, shipbrokers, and agents.
5. Analyze and interpret freight indices in all types of shipping, interpret maritime market cycles, and analyze and interpret shipbrokers' reports.
6. Define and explain the basic procedures for designing maritime liner services.
7. Explain the reasons for cooperation and different types of shipowner cooperative agreements.
8. Analyze and demonstrate the connection between overseas commodity flows of individual types of goods, specific technologies and categorizations of ships for the transport of these types of goods, and methods of contracting for transport.
9. Analyze the connection of the freight market with the shipbuilding, secondhand, and demolition markets and the application of standardized contracts.

##### 1.4. Course Outline



Analysis of world overseas trade by cargo types and regions, structure of the world merchant fleet by ship types, age structure of ships, and structure of the world fleet by ownership (countries) and operators.  
 Overview of international maritime and trade organizations. Shipowners and operators in all types of shipping.  
 Specifics of the work of shipbrokers and maritime agents.  
 Segmentation of the shipping market. Categorization of ships in the transport of bulk, liquid, gaseous, containerized cargo and the offshore industry. Freight indices by all types of shipping. Shipping market cycles.  
 Supply and demand in the shipping market.  
 Regulations on market competition in the maritime industry. Organizational structure of shipping companies.  
 Outsourcing jobs in the maritime industry: ship management, D/A Desk, C/P Desk, service sharing centers, planning centers, etc.  
 Basics of designing maritime liner services. Criteria for selecting the optimal maritime service and shipping company from the user's perspective.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input checked="" type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input checked="" type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____

1.6. Comments	Email communication with the Head of course: <a href="mailto:jakov.karmelic@uniri.hr">jakov.karmelic@uniri.hr</a>
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1.7. Student Obligations
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The student must be present at lectures and exercises for at least 70% of the total hours and prepare and present a written seminar paper on a given topic that should be positively assessed before taking the final oral exam.

1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper	1,5	Experiment	
Written exam		Oral exam	2	Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



### 1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluating the acquired learning outcomes is performed according to the Ordinance on Studies of the University of Rijeka and the Ordinance on Studying at the Faculty of Maritime Studies in Rijeka, as follows:

#### A) Requirements for taking the oral exam:

- Active class attendance
- Preparation and presentation of seminar paper (40 points)

#### A. Prerequisite for passing the oral exam (60 points):

- At least 50% of complete theoretical knowledge of the course of International Shipping Business

Examples of evaluating learning outcomes in relation to set learning outcomes are:

1. Explain the characteristics of each segment of maritime shipping markets.
2. Describe the principles, goals, and modes of operation of international maritime and trade organizations.
3. Interpret the structure of world overseas trade by types of cargo and types of ships.
4. Describe the role of maritime transport entities in all types of shipping, especially shipowners, operators, shipbrokers, and agents.
5. Interpret freight indices, shipping market cycles, and brokers' reports in all types of shipping.
6. Explain the basic procedures for designing maritime liner services.
7. Explain the reasons for the cooperation and the different types of shipping cooperation agreements among the shipowners and operators.
8. Demonstrate the connection between the overseas flows of certain types of goods, specific technology and segmentation of ships for the transport of these types of goods, and the ways of contracting sea transport.

During the preparation of the research seminar, individual topics from the field of international shipping business are researched in more detail.

### 1.10. Main Reading

- 1.) Domijan-Arneri, I.: Poslovanje u morskom brodarstvu, Redak, Split, 2014.
- 2.) Hess, M., Kos, S.: Ugovaranje u pomorstvu, Pomorski fakultet u Rijeci, 2013.
- 3.) Review of Maritime Transport, UNCTAD, New York and Geneva, web edition
- 4.) Shipping and Shipbuilding Markets, Annual Review Barry Rogliano Salles, web edition

### 1.11. Recommended Reading

- 1) Stopford, M.: Maritime Economics, Routledge, 2009.
- 2) Batalić, M., Mitrović, F.: Financiranje u pomorstvu, Pomorski fakultet u Splitu, Split, 2010.
- 3) Karmelić, J.: Kooperacije među brodarima, Pomorstvo, god. 21, br. 2, 2007.
- 4) Karmelić, J.: Sporazum o raspodjeli brodskog prostora, Pomorstvo, god. 24, br. 2, 2010.

### 1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Domijan-Arneri, I.: Poslovanje u morskom brodarstvu, Redak, Split, 2014.	5	40
Hess, M., Kos, S.: Ugovaranje u pomorstvu, Pomorski fakultet u Rijeci, 2013	5	40
Review of Maritime Transport, UNCTAD, New York and Geneva, web edition	40	40
Shipping and Shipbuilding Markets, Annual Review Barry Rogliano Salles, web edition	40	40
Shipping Statistics and Market Review, ISL (Institute of	1	40



Shipping Economics and Logistics), Bremen		
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1.13. <i>Quality Assurance</i>
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<p>The quality of studies is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance, which is carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the examination pass rate are analyzed, and appropriate measures are adopted.</p>
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### 3.2. Course description

Generic information		
Head of Course		
Course	MASTER'S THESIS	
Study Programme	Logistics and Management in Maritime Industry and Transport	
Type of Course	Mandatory	
Year of Study	2rd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	15
	Number of Hours (L+E+S)	

#### 1. GENERAL COURSE DESCRIPTION

##### 1.1. Course Objectives

The objective of the course is to enable students to independently apply the theoretical and practical knowledge acquired during their studies in the treatment of a selected professional or scientific topic. Students are encouraged to critically analyse domestic and foreign literature, correctly apply research methodology, and structurally compose written work in accordance with academic standards and faculty regulations. Special attention is given to developing the ability to interpret and evaluate relevant data, theoretical approaches, and practical examples. Through the process of consultations with a mentor and a final defence, students acquire competencies to present the results and conclusions of their research before a professional committee, thereby demonstrating academic maturity and the ability to solve complex problems.

##### 1.2. Prerequisites for Course Registration

The student enrolls in the course Master's Thesis by registering for the sixth (summer) semester of the undergraduate study program.

##### 1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Analyse relevant domestic and foreign literature and identify key insights, viewpoints, and facts related to the research topic.
2. Apply research methodology in the planning, processing, and interpretation of collected data.
3. Synthesize data from various sources and compose a coherent master's thesis text that includes illustrations (tables, graphs, diagrams) in accordance with research methodology.
4. Evaluate research results and formulate conclusions that reflect an understanding of the problem and the ability for critical thinking.
5. Present and defend the main results and conclusions of the master's thesis before a mentor and professional committee.

##### 1.4. Course Outline

The master's thesis is an independent professional or scientific treatment of a selected topic. By completing it, the student demonstrates possession of the necessary competencies and learning outcomes, as well as the ability to apply theoretical and practical knowledge acquired during the studies. In the process of defending the master's thesis, the student must demonstrate mastery of relevant scientific and professional knowledge related to the chosen topic. The thesis is written and defended in Croatian, though, exceptionally, it may also be written and defended in English. The oral defence is conducted before the mentor and a Committee for the Defence and Evaluation of the master's thesis.

##### 1.5. Modes of Instruction

☐ Lectures

☐ Seminars and workshops

☒ Practical work

☐ Multimedia and Network

	<input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Laboratory <input checked="" type="checkbox"/> Mentorship <input checked="" type="checkbox"/> Other (research and collaboration with industry professionals, analysis and processing of practical examples and data, and so forth)					
1.6. Comments							
1.7. Student Obligations							
<p>The student, in agreement with the mentor, must choose the topic of the master's thesis and write it according to the instructions found on the faculty website:  <a href="https://www.pfri.uniri.hr/web/hr/dokumenti/Upute.za.izradu.diplomskoga.rada.PFRI.26.3.2024.pdf">https://www.pfri.uniri.hr/web/hr/dokumenti/Upute.za.izradu.diplomskoga.rada.PFRI.26.3.2024.pdf</a></p> <p>As assistance for the student, a template for preparing the master's thesis is also available on the faculty pages:  <a href="https://www.pfri.uniri.hr/web/hr/dokumenti/Predlozak_za_diplomski_rad_08.07.2024.docx">https://www.pfri.uniri.hr/web/hr/dokumenti/Predlozak_za_diplomski_rad_08.07.2024.docx</a></p> <p>The paper must be grammatically, orthographically, and stylistically correct.</p> <p>After the first consultative meeting between the student and mentor, the student consults the assigned literature, studies the subject matter, consults their own collected sources, and thoroughly develops the content of the thesis.</p> <p>Once the mentor approves and accepts the master's thesis, the student submits the final version to the student office.</p> <p>The master's thesis is written in accordance with the Regulations on the Master's Thesis:  <a href="https://www.pfri.uniri.hr/web/hr/dokumenti/pravni_akti/Pravilnik.o.diplomskom.radu.na.sveucilisnom.diplomskom.studiju.pdf">https://www.pfri.uniri.hr/web/hr/dokumenti/pravni_akti/Pravilnik.o.diplomskom.radu.na.sveucilisnom.diplomskom.studiju.pdf</a></p>							
1.8. Assessment <sup>1</sup> of Learning Outcomes							
Course attendance		Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	5
Project		Continuous Assessment		Presentation		Practical work	
Portfolio		Mentorship work	2	Master's thesis in written form	5	Oral defence of the master's thesis	3
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
<p>Verification of the achievement of learning outcomes is conducted before the mentor and a professional Committee composed of three members, including the mentor. An external associate can be a member of the Committee if the thesis topic requires additional specific knowledge and competencies. The student must defend the thesis with an oral presentation and by answering questions. The Committee evaluates the quality and coverage of the work, clarity and precision of the presentation, the ability to answer professional questions, and the level of mastery of the chosen topic. During the defence, a report is kept in which data about the work, questions posed, and the candidate's success grade are recorded.</p> <p>The originality of the master's thesis is checked using an appropriate IT system, and the mentor, based on the analysis, compiles a report on the conducted check. A positive opinion from the mentor and confirmation of the originality of the work are prerequisites for accepting the work and organizing the defence.</p>							

<sup>1</sup> **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.10. <i>Mandatory literature (at the time of study program proposal submission)</i>		
<ol style="list-style-type: none"><li>1. Mandatory literature from the course for which the master's thesis is registered and written</li><li>2. Additional literature in agreement with the course instructor – mentor</li><li>3. Instructions for writing the master's thesis, editors: Prof. Dr. I. Kolanović, Associate Prof. Dr. A. Perić Hadžić, Associate Prof. Dr. I. Jurdana, Assistant Prof. Dr. M. Jardas, University of Rijeka, Faculty of Maritime Studies, Rijeka, 2024 – available at <a href="https://www.pfri.uniri.hr/web/hr/dokumenti/Upute.za.izradu.diplomskoga.rada.PFRI.26.3.2024.pdf">https://www.pfri.uniri.hr/web/hr/dokumenti/Upute.za.izradu.diplomskoga.rada.PFRI.26.3.2024.pdf</a></li></ol>		
1.11. <i>Recommended Reading (at the time of study program proposal submission)</i>		
<ol style="list-style-type: none"><li>1. Mandatory literature from the course for which the master's thesis is registered and written</li><li>2. Additional literature in agreement with the course instructor – mentor</li></ol>		
1.12. <i>Number of Main Reading Examples</i>		
	<i>Title</i>	<i>Reading examples      Number of students</i>
1.13. <i>Quality Assurance</i>		
The quality of studying is continuously monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. An annual analysis of exam pass rates is conducted, and student surveys are carried out once per semester. Additionally, pass rate results are analyzed annually, and appropriate measures are taken based on the findings.		