



**Sveučilište u Rijeci, Pomorski fakultet**  
University of Rijeka, Faculty of Maritime Studies

## CURRICULUM AND STUDY PROGRAM

# Nautical Studies and Maritime Transport Technology

UNDERGRADUATE DEGREE PROGRAMME  
GRADUATE DEGREE PROGRAMME



**UNIVERSITY OF RIJEKA**

**Faculty of Maritime Studies, Rijeka**

**Undergraduate and Graduate Degree  
Program**

**NAUTICAL STUDIES AND MARITIME  
TRANSPORT TECHNOLOGY**

## CONTENTS

### 1. INTRODUCTION

- 1.1 REASONS FOR LAUNCHING THE STUDY PROGRAMME
- 1.2 EXPERIENCES OF THE PROPONENT IN IMPLEMENTING EQUIVALENT OR SIMILAR PROGRAMMES
- 1.3 POTENTIAL PARTNERS OUTSIDE THE HIGHER EDUCATION SYSTEM
- 1.4 OPENNESS OF THE STUDY PROGRAMME TO STUDENT MOBILITY
- 1.5 OTHER ELEMENTS AND NECESSARY INFORMATION

### 2. GENERAL PART

- 2.1 NAME OF THE STUDY PROGRAMME
- 2.2 PROGRAMME HOLDER AND IMPLEMENTING INSTITUTION
- 2.3 DURATION OF STUDY PROGRAMME
- 2.4 ENROLMENT REQUIREMENTS
- 2.5 UNDERGRADUATE STUDY PROGRAMME
- 2.6 GRADUATE STUDY PROGRAMME
- 2.7 INITIATING INTEGRATED UNDERGRADUATE AND GRADUATE STUDY PROGRAMME
- 2.8 ACADEMIC TITLE AWARDED UPON COMPLETION

### 3. Group learning outcomes defined with learning outcomes of the undergraduate university study programme in Nautical Studies and Maritime Transport Technology

- 3.1 Set of learning outcomes of the undergraduate university study programme in Nautical Studies and Maritime Transport Technology

### 4. Goup learning outcomes defined with learning outcomes of the graduate university study programme in Nautical Studies and Maritime TransportTechnology

- 4. 1 Set of learning outcomes of the graduate university study programme in Nautical Studies and Maritime Transport Technology
-

## 1. INTRODUCTION

The fundamental objective of systematic education of present and future experts in practice, skills, raising the level of navigational safety, approaches to new forms of business and modern technology in maritime affairs and maritime transport—as a means of better management and intensified development of the entire maritime and transport system—is the strengthening of individual competence, and the creation of a structure better suited to the challenges of Croatia's future economic development.

The main goals and purpose of the study programme in Nautical Studies and Maritime Transport Technology are:

- regular education for the highest maritime officer ranks (Chief Mate and Master on ships over 3,000 GT) for Croatian shipping companies and the global market,
- development of a culture of safety at sea and protection of the marine environment within the system of continuous training and education of seafarers,
- scientific approach to the revitalisation of the Croatian maritime economy,
- further improvement of the quality of higher education of maritime professionals according to world and EU standards, and in accordance with the Bologna Declaration,
- lifelong education (continuing education) in line with the principles of the STCW Convention 1978, as amended, (mobility and global comparability of curricula, teachers, and students), as well as retraining programmes according to the EU “METNET” project.

The main features of this study programme are:

- alignment and compatibility of study programmes,
- international equivalence of diplomas and professional titles,
- specificity of maritime officer education worldwide, which is reflected in the strong interconnection of scientific and professional work.

---

### 1.2 REASONS FOR LAUNCHING THE STUDY PROGRAMME

#### *Assessment of the programme's relevance*

From the perspective of relevance and labour market needs in both the public and private sector, the initiation of a new study programme represents an attempt to respond to the permanent demand of shipowners for personnel capable of managing a modern ship as a complex technical and technological system, as well as possessing knowledge of maritime business operations not only from the standpoint of shipowners but also other systems within the maritime sector.

The study programme finds application in various branches of the maritime economy and different scientific fields, while at the same time providing a basis for the successful functioning of entrepreneurship and the competent social and state structures. Upon completion of the study, the knowledge acquired enables students to find employment in institutions engaged in maritimelated activities, as well as in maritime, transport, and business companies responsible for the management and implementation of the transport process, with special emphasis on maritime transport.

### ***Connection with contemporary scientific knowledge***

All study programmes are closely linked to contemporary scientific knowledge in the scientific field of Technical Sciences, specifically Transport and Traffic Technology, and especially in the field of Maritime Studies. All required knowledge and skills are based on contemporary scientific insights within this area.

---

### ***Comparability with programmes of renowned international higher education institutions***

During the creation of this programme, special attention was paid to harmonising curricula and courses with those of other renowned international higher education institutions, in order to make the programmes mutually comparable.

It is necessary to provide additional explanation regarding the comparability of the undergraduate and graduate study programme in Nautical Studies and Maritime Transport Technology with related study programmes and higher education institutions worldwide.

Namely, the system of education for maritime professionals differs greatly across the world, such that there are no two countries in which the education system is identical. This applies to almost all components of higher education: admission requirements, purpose and objectives of attaining education, type and organisation of studies by specialisations, programme duration, professional titles and diplomas awarded by particular institutions, names of institutions of higher education, etc.

An analysis of related institutions worldwide, especially within the European Union, which are engaged in maritime education, has confirmed a high degree of comparability of the study programme curriculum with the following institutions:

- World Maritime University (International Maritime Organization - IMO), Malmö
- University of Rostock
- Facultat de Nàutica de Barcelona, Barcelona Tech
- Vestfold College of Maritime Studies – Norway, Nautical Studies
- Faculty of Navigation and Naval Transport, Constanta, Romania – Navigation and Naval Transport Faculty
- Massachusetts Maritime Academy, USA – Marine Transportation
- U.S. Merchant Marine Academy, Kings Point – Maritime Operations and Technology

- Gdynia Maritime University, Gdynia, Poland

## **1.2 PREVIOUS EXPERIENCE OF THE PROPONENT IN IMPLEMENTING EQUIVALENT OR SIMILAR PROGRAMMES**

The new study programme in Nautical Studies and Maritime Transport Technology is the successor of the former four-year Nautical Studies programme that had been offered for many years at the Faculty of Maritime Studies in Rijeka. The contents required for the education of seafarers in accordance with the STCW Convention 1978, as amended, were included in the first two years of study, while the following two years served as an advanced stage. This advanced stage was intended for professional work of maritime experts ashore.

It is important to emphasise that the new programme was built on these foundations, based on the Bologna Declaration, contemporary international developments, and the latest scientific insights. By taking into account challenges encountered in prior programme delivery, this new programme has been modernised both organisationally and substantively, and designed as a three-year university undergraduate programme, with the possibility of continuing onto a two-year university graduate programme. This path of education enables students to attain the highest academic degree, Doctor of Science, in the field of Technical Sciences, Transport and Traffic Technology, through the postgraduate doctoral university study programme "Maritime Studies".

## **1.3 POTENTIAL PARTNERS OUTSIDE THE HIGHER EDUCATION SYSTEM THAT HAVE SHOWN INTEREST OR COULD BE INTERESTED IN THE LAUNCH OF THE GRADUATE STUDY PROGRAMME**

The graduate study programme is designed to ensure employment and successful careers not only within the core profession but also in various maritime and transport institutions and companies whose activities are closely related to maritime affairs.

Therefore, stakeholders outside the higher education system who could be, or already are, interested include institutions or companies such as Harbour Master's Offices, the Ministry responsible for maritime affairs and other ministries, Port Authorities, seaports, shipping companies, shipyards, agencies, freight forwarders, customs services, transport companies, and others.

It is important to emphasise that the Faculty of Maritime Studies in Rijeka has already established cooperation with these stakeholders. Cooperation agreements have been signed with a number of organisations, and similar agreements are planned to be signed in the future.

Some of the more significant institutions or companies include: the Ministry of the Sea, Tourism, Transport and Development and other ministries; State Port Authorities (Rijeka, Pula, Senj, Zadar, Šibenik, Split, Ploče, and Dubrovnik), as well as County Port Authorities; companies engaged in port activities (Port of Rijeka, Port of Pula, Port of Zadar, Port of Šibenik, Port of Split, Port of Ploče, Port of Dubrovnik); shipping companies (Jadrolinija Rijeka, Tankerska plovdba Zadar); shipyards (3. Maj Rijeka,



Uljanik Pula, Kraljevica, ...); international shipping companies such as CMA-CGM and Maersk, etc.

#### **1.4 OPENNESS OF THE STUDY PROGRAMME TO STUDENT MOBILITY**

Comparisons with related study programmes at the aforementioned universities, maritime faculties, and other higher education institutions worldwide—with which the Faculty of Maritime Studies, University of Rijeka, has established various forms of cooperation—provide assurance that precisely with these institutions it is possible to achieve the objectives of the Bologna Declaration: compatibility of study programmes, mobility of teaching staff, and students.

These programmes enable mobility between study programmes at the Faculty of Maritime Studies, University of Rijeka, between related study programmes offered by other faculties of the University of Rijeka (e.g. Faculty of Engineering, Faculty of Economics, Faculty of Law, Faculty of Tourism and Hospitality Management), or faculties/departments of other Croatian universities (e.g. Faculty of Maritime Studies, University of Split; Department of Maritime Studies, University of Dubrovnik; Faculty of Transport and Traffic Sciences, University of Zagreb, etc.), as well as study programmes of recognised higher education institutions worldwide, particularly those within the European Union.

Within the framework of the Erasmus student exchange programme, the Faculty has signed agreements with a number of leading maritime higher education institutions worldwide, thereby enabling international student mobility. The list of partner institutions of the Faculty for Erasmus student exchange is available at the following link:

[https://www.pfri.uniri.hr/web/hr/erasmus\\_partner\\_institutions.php](https://www.pfri.uniri.hr/web/hr/erasmus_partner_institutions.php)

#### **1.5. OTHER ELEMENTS AND NECESSARY INFORMATION**

It is important to highlight that the Nautical Studies programme is a very specific study programme which, in addition to meeting the general principles required of all university programmes, must also comply with highly specific principles, including mandatory compliance with international standards, strong multidisciplinary, and the interconnection of science and professional practice.

Compliance refers primarily to mandatory adherence to international standards established by the International Maritime Organization (IMO) headquartered in London.

Accordingly, the study programme presupposes compliance and compatibility with the STCW Convention 1978, as amended (International Maritime Organization Convention on Standards of Training, Certification and Watchkeeping for Seafarers), and indirectly with other IMO conventions such as SOLAS 74/78, MARPOL 73/78, etc. It should be noted that all these conventions have been ratified by the Republic of Croatia and are therefore binding.

On the basis of the requirements of the STCW Convention 1978, as amended, the Ordinance on Ranks and Certificates of Competence for Seafarers on Merchant Ships of the Republic of Croatia was adopted, which entered into force in 1998 (Official Gazette NN 130/13, with amendments NN 45/14, NN 124/15).

Another feature of the programme is its alignment with the models of maritime education of the most developed maritime nations (particularly the European Union, followed by the USA, Japan, and Australia) and the adoption of educational standards of the Maritime Education and Training (MET) system.

In view of the above, it should be underlined that, in addition to requirements the Ministry of Science, Education and Youth, the proposed undergraduate programme must also meet the requirements and undergo verification by the National Council for Higher Education and by the Ministry of the Sea, Tourism, Transport and Development. In doing so, the following requirements must be met:

- compatibility of the study programme with the requirements of the STCW Convention 1978, as amended, and of the Ordinance on Ranks and Certificates of Competence for Seafarers on Merchant Ships of the Republic of Croatia,
- teaching staff involved in the teaching of specialist courses must hold relevant maritime certificates in accordance with the STCW Convention 1978, as amended,
- the institution must meet strict requirements regarding premises, appropriate equipment, and other teaching aids (particularly modern navigation simulators, ship manoeuvring simulators, cargo handling simulators, radio communication simulators, appropriate literature, safety training centres, and a training ship),
- the institution must hold an ISO certificate of the international quality standard recognised by the Ministry of the Sea, Tourism, Transport and Development.

It should also be stressed that the Faculty of Maritime Studies, University of Rijeka, has already implemented a nautical study programme that fulfilled these requirements. Therefore, the new programme, apart from being modernised, has not departed from the previously established principles.

In the newly proposed undergraduate study programme, the required contents in accordance with the STCW Convention 1978, as amended, are covered within three years of study.

Students enrolled in the undergraduate study programme, upon passing the examinations in mandatory contents under the STCW Convention 1978, as amended, and according to the Ordinance on Ranks and Certificates of Competence for Seafarers on Merchant Ships of the Republic of Croatia, may, with a certificate (without diploma) issued by the higher education institution, undertake sea service and sit for examinations to obtain the highest officer certificates (Chief Mate and Master on ships over 3,000 GT).

Upon completion of the university undergraduate study programme, students are awarded their degree.



## **2. GENERAL PART**

### **2.1 NAME OF THE STUDY PROGRAMME**

*Study programme in Nautical Studies and Maritime Transport Technology*

### **2.2 PROGRAMME HOLDER**

The programme is carried out by the Faculty of Maritime Studies, University of Rijeka.

### **2.3 DURATION OF STUDY PROGRAMME**

The duration of the undergraduate study is 3 years or 6 semesters. Teaching is delivered over six semesters and awarded a total of 180 ECTS credits.

The duration of the graduate study is 2 years or 4 semesters. Teaching is delivered over four semesters and awarded a total of 120 ECTS credits.

During six or ten semesters respectively, lectures and other forms of teaching are conducted. The forms of teaching include lectures, seminars, practice sessions, workshops, individual consultations, mentoring, simulator practice, practice on maritime training grounds, practice in the Navigation and Safety at the Maritime Training Centre of the Faculty of Maritime Studies in Rijeka and on board ships, as well as by investigating case studies from professional practice and literature.

### **2.4 ENROLMENT REQUIREMENTS**

Admission to the first year of study is based on a public call and the results achieved in the admission process, or through transfer from another related higher education institution. Admission to higher years of study is based on fulfilment of the enrolment requirements defined by the study regulations.

Applicants eligible for enrolment are those who have completed a four-year secondary school education and who submit a complete and timely application for the admission process.

The right to enrol in the Faculty is granted to every applicant meeting the prescribed admission requirements publicly announced by the Faculty, and within the framework of the Faculty's enrolment quota. If the number of applicants who meet the admission requirements exceeds the Faculty's enrolment quota, only those applicants who achieve the highest number of points in the classification process will be granted the right to enrol, within the quota confirmed by the Senate of the University of Rijeka.

## **2.5. UNDERGRADUATE STUDY PROGRAMME**

The study programme is designed in such a way as to prepare students to navigate and command ships, while also equipping them with the competence to participate in the management of shipping companies or maritime transport operations.

The curriculum includes knowledge in the fields of engineering, technology, economics, law, and management. The application of this knowledge enables graduates to find employment and to perform successfully both in their core profession and in various maritime and transport institutions and companies whose activities are closely linked to maritime affairs (Harbour Master's Offices, the Ministry responsible for maritime affairs, ports, Port Authorities, shipping companies, agencies, freight forwarders, customs services, transport companies, etc.).

The contents required by the STCW Convention 1978, as amended, necessary for attaining the highest maritime ranks (Chief Mate and Master on ships over 3,000 GT), are integrated across the three years of study.

Courses are planned as either one-semester or two-semester courses, with the possibility of dynamic modification of their content and student participation in mobility schemes and exchange programmes with other universities at any stage of their studies.

## **2.6. GRADUATE STUDY PROGRAMME**

The study programme is designed as an extension of the undergraduate contents, providing students with preparation for managerial positions and successful performance in various maritime and transport institutions and companies whose activities are closely related to maritime affairs (Harbour Master's Offices, the Ministry responsible for maritime affairs, ports, Port Authorities, shipping companies, shipyards, agencies, freight forwarders, customs services, transport companies, etc.).

Courses are planned as one-semester courses, with the possibility of dynamic content modification and student participation in mobility schemes and exchange programmes with other universities at any stage of their studies.

The curriculum encompasses knowledge from the fields of engineering, technology, economics, law, and management. The programme enables specialisation in the fields of Nautical Sciences, Marine Ecology and Environmental Protection, Maritime Management, and Transport Technological Systems.

## **2.7 INITIATING INTEGRATED UNDERGRADUATE AND GRADUATE STUDY**

## PROGRAMME

The undergraduate and graduate study programmes are not integrated into a single programme, but are designed separately as an undergraduate and graduate study in the 3 + 2 model.

### 2.8 ACADEMIC TITLE OR DEGREE AWARDED UPON COMPLETION OF STUDY

Upon completion of the three-year undergraduate university study programme, the academic title of *Baccalaureus* or *Baccalaurea* with a designation of profession is awarded (in international use and on the diploma in English language, also *Baccalaureus* or *Baccalaurea*).

The academic title awarded is:

**Baccalaureus/Baccalaurea in Nautical Science and Maritime Transport Technology**

In international use and on the diploma in English language:

**Bachelor of Science in Nautical Studies and Maritime Transport Technology (BSc)**

Upon completion of the two-year graduate university study programme, the academic title of *Master* with a designation of profession is awarded.

The academic title awarded is:

**Master in Nautical Studies and Maritime Transport Technology In**

international use and on the diploma in English language:

**Master of Science in Nautical Studies and Maritime Transport Technology (MSc)**

### Tabular Presentation of the General Part of the Undergraduate Study Programme

Type of study programme	Undergraduate study programme	
Title	Nautical Studies and Maritime Transport Technology	
Programme Holder	Proponent	Faculty of Maritime Studies, University of Rijeka
	Implementing Institution	Faculty of Maritime Studies, University of Rijeka
Duration	3 years	
ECTS	180	
Admission Requirements	Completed four-year secondary school education	
Competences Acquired upon Completion	Ability to command a ship Ability to participate in the management of shipping companies Ability to manage maritime navigation	
Possibility of Further Study	Graduate Study Programme	
Academic Title or Degree Awarded	Bachelor of Science in Nautical Studies and Maritime Transportation Technology	

#### Distribution of Credits during the Three-Year Undergraduate Study Programme:

Year	Semester	Mandatory courses	Elective courses (min)	Total
1	I	30	-	30
	II	30	-	30
2	III	30	-	30
	IV	30	-	30
3	V	13	17	30
	VI	16	14	30
Total		149	31	180

### Tabular Presentation of the General Part of the Graduate Study Programme

Type of Study Programme	Graduate study programme
Title	Nautical Studies and Maritime Transport Technology

<b>Programme holder</b>	<b>Proponent</b>	<b>Faculty of Maritime Studies, University of Rijeka</b>
	<b>Implementing institution</b>	<b>Faculty of Maritime Studies, University of Rijeka</b>
<b>Duration</b>	<b>2 years</b>	
<b>ECTS</b>	<b>120</b>	
<b>Admission requirements</b>	Completed undergraduate study in Nautical Studies and Maritime Transport Technology or completed undergraduate study at related maritime, transport, or technical faculties	
<b>Competences Acquired by Completion</b>	Preparedness for management roles in various maritime and transport institutions and companies closely related to maritime affairs	
<b>Possibilities for Further Study</b>	Doctoral study programme "Maritime Studies" at the Faculty of Maritime Studies in Rijeka Postgraduate studies at related maritime, transport, or technical faculties	
<b>Academic Title or Degree Awarded</b>	<b>Master of Science in Nautical Studies and Maritime Transport Technology</b>	

Distribution of credits during the two-year graduate study programme is organised as follows:

Year	Semester	Mandatory courses	Elective courses (min)	Total
<b>4</b>	<b>VII</b>	21	9	<b>30</b>
	<b>VIII</b>	20	10	<b>30</b>
<b>5</b>	<b>XI</b>	21	9	<b>30</b>
	<b>X</b>	15	15	<b>30</b>
<b>Total</b>		<b>77</b>	<b>43</b>	<b>120</b>

### 3.Group Learning Outcomes Defined with Learning Outcomes of the Undergraduate University Study Programme in Nautical Studies and Maritime Transport Technology

1. **MARITIME NAVIGATION** – Apply knowledge and understanding of navigation leadership and demonstrate manoeuvring methods and voyage planning for ships with different technologies in all navigational and meteorological conditions.
2. **MARITIME TRANSPORT MEANS** – Present and apply knowledge about the constructional and technical-technological characteristics of various types of ships with their devices and equipment. Explain and interpret the transverse and longitudinal stability of ships and the stresses on the ship's structure.
3. **SAFETY AT SEA AND MARINE ENVIRONMENT PROTECTION** – Present and explain different types of emergencies and hazards, methods for managing procedures in emergencies and hazards, and demonstrate conducting drills. Explain procedures and systems for preventing marine pollution from ships and explain and apply methods for managing marine environmental protection measures.
4. **CARGO HANDLING AND TRANSPORT** – Understand and describe characteristics of cargo, explain technological requirements for cargo handling, and explain procedures for safe transshipment, stowage, securing, and supervision of cargo.
5. **SHIP INSPECTION, MONITORING, AND MAINTENANCE** – Explain and apply knowledge on how to control the technical condition of the ship, hull, and associated equipment; interpret and apply technical regulations and types of surveys by classification societies, including preparation of planned documentation.
6. **MARITIME MANAGEMENT AND LEADERSHIP** – Present and explain resource planning and allocation methods; apply leadership and team-working skills onboard ships and in ports.
7. **MARITIME REGULATIONS** – Understand national and international legal regulations, legal sources of maritime administrative law, legal systems, and their significance for international maritime law, trade, maritime business, and customs.
8. **MARITIME BUSINESS** – Apply knowledge of specifics of various segments of the maritime shipping market; analyse and explain financial costs in a shipping company. Understand and define the business of maritime agencies and the role of maritime agents and other legal entities in the maritime industry.
9. **QUANTITATIVE METHODS IN MARITIME STUDIES** – Apply mathematical and informatics methods in solving practical problems in transport technology. Acquire theoretical knowledge of technical mechanics as a basis for solving problems in structural statics.
10. **MARITIME ENGLISH** – Use language knowledge and skills to independently perform professional duties in maritime and transport sectors.
11. **UNDERGRADUATE THESIS** – Apply theoretical and practical knowledge in independent elaboration of a topic, properly use methodology and writing technology, and present conclusions and insights.

**Table 3.1. Set of learning outcomes for the undergraduate university study programme in Nautical Studies and Maritime Transport Technology**



Set of learning outcomes of the study programme		MARITIME TRANSPORT MEANS NAVIGATION	MARITIME TRANSPORT MEANS NAVIGATION	SAFETY AT SEA AND MARINE ENVIRONMENT PROTECTION	CARGO HANDLING AND TRANSPORT	SHIP INSPECTION, MONITORING AND MAINTENANCE	LEADERSHIP	MARITIME REGULATIONS MARITIME MANAGEMENT AND LEADERSHIP	MARITIME BUSINESS	QUANTITATIVE METHODS IN MARITIME STUDIES	MARITIME ENGLISH	UNDERGRADUATE THESIS
	<b>Mandatory courses</b> <b>Winter semester (I)</b>											
	Maritime English 1										+	
	Mathematics 1									+		
	Engineering Mechanics									+		
	Application of Electronic Computers									+		
	Ship design and construction 1		+									
	Cargos in Maritime Transport				+							
	Sea and Marine Environment Protection			+								
	Physical Education 1			+								

[illegible]

UNDERGRADUATE THESIS						
MARITIME ENGLISH	+					
QUANTITATIVE METHODS IN MARITIME STUDIES		+				
MARITIME BUSINESS						
MARITIME REGULATIONS				+		
MARITIME MANAGEMENT AND LEADERSHIP						
SHIP INSPECTION, MONITORING AND MAINTENANCE				+		
CARGO HANDLING AND TRANSPORT			+			
SAFETY AT SEA AND MARINE ENVIRONMENT PROTECTION				+		
MARITIME TRANSPORT MEANS			+		+	
MARITIME NAVIGATION		+				+
Set of learning outcomes of the study programme						
Winter semester (III)						
Maritime English 3						
Terrestrial navigation						
Cargo handling 1						
Safety at Sea						
Marine Electrical Systems						
Maritime Medicine						

UNDERGRADUATE THESIS							
MARITIME ENGLISH	+						
QUANTITATIVE METHODS IN MARITIME STUDIES							
MARITIME BUSINESS							
MARITIME REGULATIONS						+	
MARITIME MANAGEMENT AND LEADERSHIP					+		
SHIP INSPECTION, MONITORING AND MAINTENANCE							+
CARGO HANDLING AND TRANSPORT				+			+
SAFETY AT SEA AND MARINE ENVIRONMENT PROTECTION							+
MARITIME TRANSPORT MEANS							+
MARITIME NAVIGATION		+	+				+
Set of learning outcomes of the study programme							
Mandatory courses							
Summer semester (IV)							
Maritime English 4							
Astronomical Navigation							
Electronic Navigation							
Cargo handling 2							
Ship organization and management							
Maritime Private Law							
Professional Practice							

Set of learning outcomes of the study programme	UNDERGRADUATE THESIS			
	MARITIME ENGLISH			
	QUANTITATIVE METHODS IN MARITIME STUDIES			
	MARITIME BUSINESS			
	MARITIME REGULATIONS		+	
	MARITIME MANAGEMENT AND LEADERSHIP		+	
	SHIP INSPECTION, MONITORING AND MAINTENANCE		+	+
	CARGO HANDLING AND TRANSPORT			+
	SAFETY AT SEA AND MARINE ENVIRONMENT PROTECTION		+	+
	MARITIME TRANSPORT MEANS			+
	MARITIME NAVIGATION	+		+
Mandatory courses				
Summer semester (VI)				
Passage Planning	+			
Safety and Quality Management in Shipping				
On-board Training	+			

Bachelor of Science Thesis											+
<b>Elective Courses</b>											
Maritime English 6										+	
Container transport technology and ro-ro technology		+	+	+							
Passenger Transport Technology		+	+	+							
Business operations in shipping						+		+			
Port and terminal technology		+				+					

#### 4. Group learning outcomes defined with learning outcomes at the graduate university study programme in Nautical Studies and Maritime Transport Technology

1. **INTERNATIONAL MARITIME TRANSPORT SYSTEMS AND MARINE TECHNOLOGIES** – Explain and apply knowledge of specific maritime international transport systems and marine technologies, considering individual branches of maritime systems in shipping based on the application of modern technological solutions or resulting from technological development.
2. **INTERNATIONAL MARITIME BUSINESS AND CONTRACTING IN SHIPPING** – Apply knowledge and understanding of the operations of international maritime and trade organisations, the business of shipping companies and other entities in maritime transport services, as well as ship chartering in different segments of the maritime market, including cargo transport contracting and ship positioning in the open maritime market.
3. **RISK MANAGEMENT IN SHIPPING** – Explain and apply knowledge impacting risk assessment and analyse specific factors and applicable methods in maritime transport.
4. **MARITIME DESIGN OF PORTS AND NAVIGABLE WATERS** – Apply knowledge and understanding of factors influencing the maritime aspect of the planning and design of ports and navigable waterways, especially approach channels in restricted navigable areas.
5. **QUANTITATIVE APPLIED METHODS IN MARITIME STUDIES, MODELLING AND SIMULATIONS** – Apply knowledge of numerical mathematics and probability theory to the application of numerical methods in transport technology. Understand and apply simulation modelling in the analysis and design of business processes.
6. **METHODOLOGY OF SCIENTIFIC RESEARCH WORK** – Apply knowledge of fundamental concepts and methodology and technology of scientific and professional research for use in writing student professional/scientific papers.
7. **GRADUATE THESIS** – Define a professional/scientific problem, plan and conduct research, independently solve the problem using acquired knowledge and competencies during the study, apply methodology of writing professional/scientific works, prepare a concise presentation of research results and proposed solutions, and present them succinctly.

**Table 4.1. Set of learning outcomes for the graduate university study programme in Nautical Studies and Maritime Transport Technology**

#### Graduate study programme in Nautical Studies and Maritime Transport Technology

Set of learning outcomes of the study programme							
---	--	--	--	--	--	--	--

GRADUATE THESIS							
METHODOLOGY OF SCIENTIFIC RESEARCH WORK		+					
QUANTITATIVE APPLIED METHODS IN MARITIME STUDIES, MODELLING AND SIMULATIONS	+						
MARITIME DESIGN OF PORTS AND NAVIGABLE WATERS				+			
RISK MANAGEMENT IN SHIPPING							
INTERNATIONAL MARITIME BUSINESS AND CONTRACTING IN SHIPPING							
INTERNATIONAL MARITIME TRANSPORT SYSTEMS AND MARINE TECHNOLOGIES							
Mandatory courses Winter semester (I)							
Applied Mathematics							
Scientific Research Methodology							
Maritime Systems	+						
Marine technologies	+						
Elective Courses							
Coastal Zone Management		+					
Survey and maintenance planning of ship systems		+					
Human Resource Management		+	+				
Shipping and Port Management	+	+					
Multiculturalism and Communication on Board		+				+	

GRADUATE THESIS							
METHODOLOGY OF SCIENTIFIC RESEARCH WORK							
QUANTITATIVE APPLIED METHODS IN MARITIME STUDIES, MODELLING AND SIMULATIONS	+						
MARITIME DESIGN OF PORTS AND NAVIGABLE WATERS							
RISK MANAGEMENT IN SHIPPING							
INTERNATIONAL MARITIME BUSINESS AND CONTRACTING IN SHIPPING							
INTERNATIONAL MARITIME TRANSPORT SYSTEMS AND MARINE TECHNOLOGIES							
Set of learning outcomes of the study programme							
Mandatory courses Summer semester (II)							
Statistics							
Integrated and Multimodal Transport	+						
International Maritime Safety System	+	+					



International Shipping Business		+					
<b>Elective courses</b>							
Ship stability	+				+		
Satellite navigation	+				+		
Designing and Planning of Ports and Terminals	+			+			
Port economics	+	+					
Supply Chain Management		+					

Set of learning outcomes of the study programme	INTERNATIONAL MARITIME TRANSPORT SYSTEMS AND MARINE TECHNOLOGIES	INTERNATIONAL MARITIME BUSINESS AND CONTRACTING IN SHIPPING	RISK MANAGEMENT IN SHIPPING	MARITIME DESIGN OF PORTS AND NAVIGABLE WATERS	QUANTITATIVE APPLIED METHODS IN MARITIME STUDIES, MODELLING AND SIMULATIONS	METHODOLOGY OF SCIENTIFIC RESEARCH WORK	GRADUATE THESIS
Mandatory courses Winter semester (III)							
Simulation and Modelling					+		
Ship chartering		+					
Risk management in shipping			+				
Maritime Design of Ports and Waterways				+			
<b>Elective courses</b>							
Marine Accident Investigation		+	+				
Maritime pilotage	+	+					
Project Management	+	+					
Maritime Financing		+					

