

## MARITIME DEPARTMENT

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## **ABOUT US:**

The Maritime Department (known as the Professional Faculty in Zadar) started working in the academic year 2001/2002 as a dislocated study of the Faculty of Maritime Studies of the University of Rijeka. The Maritime Department as a component of the University of Zadar (at first known as the Department of Transport and Maritime Studies) was founded at the end of the 2004.

Organizational units of the Department are two divisions, namely: Division of Nautical Studies, carrying out study program of Nautical Studies and Maritime Transport Technology, and Division of Maritime Engineering, carrying out study program of Marine Engineering and Maritime Transport Technology. After the department had been founded, from the academic year 2005/2006 mentioned study programs started functioning as the studies of the University of Zadar with new structure in line with the Bologna Declaration. The curriculums meet the requirements of STCW convention and The Regulation on Requirements for the Award of Ranks and Certification of Seafarers on Board Merchant Ships of the Republic of Croatia. The practical part of the teaching process takes place on board training vessel *Kraljica mora* and *Jadrolinija* vessels.

The Maritime Department pursues collaboration with maritime faculties in Croatia and Europe, shipping companies and other companies related to maritime sector in order to equip students with academic knowledge and professional competences needed for successful entry into the labour market.

The total number of the Department's employees is 19 (out of which there is 1 full professor and 2 associate professors, 9 assistant professors, 1 postdoctoral researcher, 5

teaching assistants). Teaching staff perform scientific research in the various fields of science, in accordance with multidisciplinary nature of maritime studies.

## **STUDY PROGRAMMES**

### **Undergraduate university study programme of Marine Engineering and Maritime Transport Technology (Single-major)**

**Duration of the study: 3 years**

**Admission requirements:** Finished four-year high school programme or an equivalent high school programme Leaving Certificate

#### **Competencies acquired upon finishing the study programme:**

Study program Marine Engineering and Technology Maritime Transport, at the undergraduate level, is intended for officers acquiring certification for chief engineer and second engineer officer, at the management level on a ship powered by the main propulsion machinery of over 3000 kW.

Students are trained to manage the complex marine energy systems including management of engine room crew in operation, inspection, maintenance and fault diagnosis of marine machinery complex, by coordination of all internal and external competent entities in the process of exploitation.

Learning outcomes at the undergraduate level include acquired basic knowledge and practical work in the field of marine engineering at the management level, thus bachelors acquire the following competences:

- to plan and conduct operations starting up and stopping the main propulsion engine and auxiliary machinery, including all associated support systems;
- to determine the capacity and performance of the main and auxiliary machines, to monitor operation of complex marine machinery,
- to control safety of the main engine complex;
- to manage fuel system and ballast;
- to supervise operation of the ship's electric power complex, to use automation, instrumentation and control systems as well internal communication systems;
- to monitor and stop ship's power plants such as marine diesel engines, marine boilers, and steam and gas turbines;
- to monitor refrigeration facilities including air-conditioning systems;

- to determine the stability, resistance and strength of the vessel;
- to monitor and maintain the ship's auxiliary machinery including heat exchangers, steering gear, cargo equipment and deck machinery;
- to monitor and maintain electrical machines and devices and to handle with the security systems of the ship including fire protection system.

In all three study years attention is paid to the contents in accordance with the STCW Convention which is necessary for obtaining the highest positions in the field of maritime affairs (second engineer officer on a ship powered by the main propulsion machinery of over 3000 kW and chief engineer on a ship powered by the main propulsion machinery of over 3000 kW).

**Professional title acquired upon finishing the study programme:**

Bachelor of Marine Engineering and Maritime Transport Technology

**Course list by semesters:**

Course unit code	1. SEMESTER	Status	Hours per week			ECTS
			L	S	E	
JES 101	Maritime English JES 101	obligatory	1	0	2	4
BRO 104	Mathematics I	obligatory	2	0	2	6
BRO 106	Engineering Mechanics I	obligatory	3	0	2	6
BRO 105	Applied Computer Technology	obligatory	2	0	2	4
BRO 107	Technology of Materials	obligatory	3	0	2	5
BRO 237	Maritime Law	obligatory	2	0	0	3
BRO 108	Physical Education	obligatory	0	0	2	1
	Technology of Materials and Welding Processes	Additional program for students who have not completed secondary maritime school	30	0	30	0
	<b>2. SEMESTER</b>					
JES 102	Maritime English JES 102	obligatory	1	0	2	4
BRO 112	Mathematics II	obligatory	2	0	2	6
BRO 110	Marine Engineering Elements	obligatory	3	0	2	6
BRO 218	Engineering Mechanics II	obligatory	2	0	2	5
BRO 209	Marine Environment Protection	obligatory	2	0	0	3
BRO 101	Marine Electrical and Electronic Engineering	obligatory	4	0	2	6
BRO 1081	Physical Education	obligatory	0	0	2	1
	Special Program of Basic Safety On Board	Additional program for students who have not completed secondary maritime school	36	0	19	0
	<b>3. SEMESTER</b>					

JES 203	Maritime English JES 203	obligatory	1	0	2	4
BRO 115	Thermodynamics	obligatory	4	0	2	7
BRO 206	Ship Construction and Stability	obligatory	4	0	2	6
BRO 113	Safety at Sea	obligatory	3	0	1	5
BRO 205	Fuels, Lubricants and Water	obligatory	2	0	0	3
BRO 216	Organization and Management On Board	obligatory	3	0	0	4
BRO 103	Physical Education	obligatory	0	0	2	1
	Marine Machinery and Systems	Additional program for students who have not completed secondary maritime school	30	0	30	0
<b>4. SEMESTER</b>						
JES 204	Maritime English JES 204	obligatory	1	0	2	4
BRO 211	Marine Diesel Engines	obligatory	4	0	1	6
BRO 220	Marine Steam and Gas Turbines	obligatory	2	0	1	4
BRO 202	Marine Steam Generators	obligatory	2	0	1	4
BRO 203	Marine Auxiliary Machinery	obligatory	4	0	1	6
BRO 109	Marine Electrical Machinery	obligatory	4	0	2	6
	On Board Training and Work in the Engine Room	Additional program for students who have not completed secondary maritime school	0	0	60	0
<b>5. SEMESTAR</b>						
BRO 210	Automated Ship Propulsion	obligatory	3	0	1	5
BRO 219	Ship Maintenance	obligatory	2	0	1	4
BRO 305	Marine Refrigeration Plant	obligatory	2	0	1	4
BRO 213	Marine Engineering Systems	obligatory	2	0	0	3
BRO 208	Simulator Training I	obligatory	1	0	2	4
BRO 302	Technical Supervision and Ship Classification	obligatory	2	0	0	3
JES 305	Maritime English JES 305	optional	1	0	2	3
BRO 304	Maritime Medicine	optional	2	0	1	4
BRO 310	Maritime Economics	optional	2	0	1	4
BRO 222	Mechanisms and Vibrations	optional	2	0	1	4
BRO 246	Ship Navigation	optional	1	0	2	3
<b>6. SEMESTAR</b>						
BRO 214	Failure Diagnosis	obligatory	2	0	1	4
BRO 215	Simulator Training II	obligatory	1	0	2	4
BRO 308	On Board Training	obligatory	0	0	2	2
BRO 311	Marine Hydraulics and Pneumatics	obligatory	2	0	1	4
BRO 312	BSc Degree thesis	obligatory	0	0	8	8
JES 306	Maritime English JES 306	optional	1	0	2	3
NAU 319	Inspection and Survey of Ships	optional	2	0	0	3
BRO 223	Shipboard Energy Systems	optional	2	0	1	4
NAU 322	Liquid Cargo Transport Technology	optional	2	0	1	4
ONO 103	Traditionally Maritime Terms in the Croatian Adriatic	optional	1	1	0	3

**Undergraduate university study programme of Nautical Studies and Maritime  
Transport Technology (single-major)**

**Duration of the study:** 3 years

**Admission requirements:** Finished four-year high school programme or an equivalent high school programme Leaving Certificate

**Competencies acquired upon finishing the study programme:**

Undergraduate study of Nautical Studies and Maritime Transport Technology is organized so that as a result of the study program bachelors acquire basic nautical competencies such as planning, organizing, managing, leading and controlling. These competencies are realized through professional courses where problems of systematic use of vessel technological systems and managing of the vessel at the management level are addressed theoretically and practically.

Bachelor nautical engineers have acquired the following competences:

- to apply different techniques and methods of transportation of goods and passengers by sea with the aim of training for independent and critical work in practice;
- to critically evaluate the conditions of vessel's exploitation in terms of stability control of the ship, to select and use different methods of ship-handling;
- to combine and use ship's equipment at the management level, to manage and lead a crew based on the teamwork at the management level;
- to analyse and choose the appropriate style of management in a multicultural environment, to provide basic medical care on board, to develop a plan, to improve protection and prevent pollution of the marine environment.

Besides acquiring a nautical competences, undergraduate study of Nautical Studies and Maritime Transport Technology includes other study courses (Mathematics, Physics, English, etc.), with the aim of increasing the general competencies necessary for a complete higher education. In all three years attention is paid to the contents in accordance with the STCW Convention which is necessary for obtaining the highest positions in the field of maritime affairs (chief officer and master of a ship over 3000 gt).

**Professional title acquired upon finishing the study programme:**

Bachelor of Nautical Studies and Maritime Transport Technology

### Course list by semesters:

Course unit code	1. SEMESTER	Status	Hours per week			ECTS
			L	S	E	
JEN 101	Maritime English JEN 101	obligatory	2	0	2	5
NAU 102	Mathematics I	obligatory	2	0	2	5
NAU 118	Physics	obligatory	2	1	0	4
NAU 104	Applied Computer Technology	obligatory	2	0	2	3
NAU 105	Fundamentals of Electrical Engineering	obligatory	3	0	0	4
NAU 108	Means of Marine Transportation I	obligatory	2	0	2	5
NAU 115	Marine Environment Protection	obligatory	2	0	0	3
NAU 122	Physical Education	obligatory	0	0	2	1
	Fundamentals of Ship and Cargo	Additional program for students who have not completed secondary maritime school	60	0	0	0
	<b>2. SEMESTER</b>					
JEN 102	Maritime English JEN 102	obligatory	2	0	2	5
NAU 110	Mathematics II	obligatory	2	0	1	5
NAU 117	Means of Marine Transportation II	obligatory	2	0	2	5
NAU 119	Fundamentals of Marine Engineering	obligatory	2	0	1	4
NAU 111	Maritime Public Law	obligatory	2	0	0	3
NAU 114	Maritime Economics	obligatory	2	0	0	2
NAU 107	Maritime Meteorology and Oceanography	obligatory	3	0	1	4
NAU 116	Professional Practice	obligatory	0	0	2	1
NAU 109	Physical Education	obligatory	0	0	2	1
	Special Program of Basic Safety On Board	Additional program for students who have not completed secondary maritime school	36	0	19	0
	<b>3. SEMESTER</b>					
JEN 203	Maritime English JEN 203	obligatory	1	0	2	4
NAU 201	Terrestrial Navigation	obligatory	3	0	3	7
NAU 208	Celestial Navigation	obligatory	2	0	2	5
NAU 211	Ship Maintenance	obligatory	2	0	0	3
NAU 209	Cargo Handling I	obligatory	3	0	2	6
NAU 212	Maritime Medicine	obligatory	2	0	1	4
NAU 216	Physical Education	obligatory	0	0	2	1
	Observation and plotting radar installation and use of ARPA	Additional program for students who have not completed secondary maritime school	17	0	33	0
	<b>4. SEMESTER</b>					
JEN 204	Maritime English JEN 204	obligatory	1	0	2	4
NAU 204	Cargo Handling II	obligatory	2	0	2	6
NAU 112	Safety at Sea	obligatory	3	0	1	5
NAU 207	Maritime Property Law	obligatory	3	0	0	4
NAU 202	Electronic Navigation	obligatory	2	0	2	6

NAU 205	Organization and Management On Board	obligatory	3	0	0	4
NAU 218	Physical Education	obligatory	0	0	2	1
	Basic Skills on Board	Additional program for students who have not completed secondary maritime school	45	0	0	0
<b>5. SEMESTER</b>						
JEN 305	Maritime English JEN 305	obligatory	1	0	1	2
NAU 215	Ship Manoeuvring	obligatory	3	0	2	5
NAU 206	Maritime Communications	obligatory	2	0	3	5
NAU 210	Voyage Planning	obligatory	2	0	2	4
NAU 320	Maritime Geography	optional	2	1	0	4
NAU 312	Transport Insurance	optional	2	1	0	5
NAU 315	Intermodal Transport Technology	optional	2	1	0	3
<b>6. SEMESTER</b>						
JEN 306	Maritime English JEN 306	obligatory	1	0	1	2
NAU 213	Sailing Practice	obligatory	0	0	2	2
NAU 323	BSc Degree exam	obligatory	0	0	0	8
NAU 322	Liquid Cargo Transport Technology	obligatory	2	0	1	4
NAU 321	Maritime Accidents and Risk Management	optional	2	1	0	4
NAU 319	Inspection and Survey of Ships	optional	2	0	0	3
ONO 103	Traditional Maritime Terminology of the Croatian Adriatic	optional	1	1	0	3

### Special Education Program for Seafarers

On the basis of the Senate decision from February 25, 2011, the Department is a representative of the lifelong education program called Special Education Program for Seafarers. Similar program was launched at other maritime higher education institutions (Faculty of Maritime Studies in Rijeka, Faculty of Maritime Studies in Split and the Maritime Department of the University of Dubrovnik). Teachers and external associates of the Department were entrusted with teaching activities within this program. The program was organized in accordance with the Ordinance amendments to the Ordinance on Vocations and Certificates of Competencies for Seafarers (OG, 130/13, 45/14, 124/15, 72/16). Study courses encompass obligatory contents according to the Convention STCW i.e. the Ordinance on Vocations and Certificates of Competencies for Seafarers at Merchant Navy Ships of the Republic of Croatia. After the attendants of the program had passed all exams, they may take an exam with the Department approval for the highest vocations in accordance with the Ordinance on Amendments to the Ordinance on Vocations and Certificates of Competencies for Seafarers. At the end of the program the attendant receives a certificate.