

BSc - Bachelor of Science – Maritime and River Transport (240 ECTS)

Name of Study

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Introduction

The didactic mission of the "Maritime and River Transportation" program of study is to carry on the tradition of the Romanian higher -education Navy School, by building into graduates general, specific and behavioural skills for the development of their seafarer and ship operating career enabling them to fulfill the demands for an operational maritime officer aboard commercial vessels worldwide.

As far as onboard training (cadet programme) is concerned the Merchant Marine Faculty signs contracts with shipping and crewing agencies and uses its own (in-house) nautical training base, nautical sports, learning workshop, simulators, school squadron that includes the "Mircea" brig, and the 8700 dwt cargo ship "Albatros".

Admission to the program of studies is based on an examination of candidates, and is held in July.

Possible occupations: navigation engineer, navigation department head, maritime deck officer, maritime pilot, port captain - higher education, port manager, shipping chief engineer, shipping agent, shipping agency head, head of maritime and river transportation office .

Full-time/Part-time

Duration

8 semesters

Credits

240 ECTS

Level

Higher education

Degree

Bachelor of Science

Learning outcomes

Graduates will be able to :

- recognise the theoretical fundamentals of physico-mathematical and computer science equipment specific to the technical language of communication;
- use the basic technical knowledge in order to be able to explain and interpret concepts, processes and projects in marine engineering and navigation;
- recognise theories and principles specific for safe voyage planning, including navigation within inland and mixed (maritime-river) waterways;
- use basic knowledge for the explanation and interpretation of concepts, processes and projects specific for safe planning and management of a voyage;
- elaborate models and projects that use established principles and methods of

navigation and ship maneuvering at operational level;

- use specialized technical knowledge to explain and interpret concepts, processes and specific projects for safe handling and stowing of cargo;
- apply appropriate methods and techniques for monitoring the loading, stowage, lashing and unloading of cargo during the voyage;
- use specialized technical knowledge to explain and interpret issues concerning seaworthiness and safety of the ship at sea and river;
- apply the principles and basic methods for solving specific problems related to pollution prevention and control, as well as organization of emergency drills (fire, abandon ship, medical first aid, etc.).

Prerequisites

High school diploma

Structure and organization

The curriculum is structured around four years of studies, i.e. 8 semesters of 14 weeks each, 30 ECTS per each semester with a total of 240 ECTS.

The Maritime and River Transportation Study programme is interdisciplinary, focusing on maritime subjects and basic knowledge of marine engineering and navigation area.

After the first two years of theoretical instruction the aspirants will be taught knowledge and skills as required for cadets aboard ships. Students will get familiar with specialized terminology, international laws, and safety aboard ships, as well as with operations aboard ships and in ports.

The curriculum includes core subjects (Mathematics, Physics, Chemistry, Drafting, etc), subjects in the field (Fundamentals of Seamanship, Mechanics and Fluid Mechanics, Electronics, Meteorology and Oceanography, etc.), specialty (Celestial navigation, Waterborne Transport Operations, Maritime communications, Maritime Law Orthodromic Navigation and Radioelectronic Navigation SAR, etc.), mandatory or optional, in compliance with STCW 2010, criteria and standards required by ARACIS in Engineering Sciences.

The subjects of study are provided in a logical order and they define the student's competences in compliance with similar study programs from the EU countries (Bologna version) and other international maritime universities.

The syllabi specify the objectives of the study, the basic thematic content, duration and number of credits, student assessment system and minimal literature in the field.

The 1st, 2nd, and 3rd years of study offer students cycles of seamanship training. The 8th semester is dedicated to the elaboration of the diploma paper.

A training period of 12 months, accomplished in international voyages, on board merchant vessels of 500 GRT or larger than that is obligatory for obtaining a certificate of competence as deck officer.

Aims and Goals

Graduates will acquire the necessary theoretical education, which, together with on-board training will entitle them to perform watchkeeping on deck.

After service at sea as watch officers, graduates are entitled to apply for the highest management level maritime certificates and obtain the title of master.

The specific objectives of the program aim at the ship safety and her effective operation.

The program offers graduates general knowledge and specialized skills for positions of major responsibility in shipping, along with a competent training in the field of mechanical and naval engineering, in the design and development of naval products.

Engineers are competent to perform maintenance interdisciplinary technology on board. They are also supposed to make effective use of human relations techniques within a multicultural crew (most probable multinational), at various hierarchical levels, of oral and written communication, of effective collaboration with experts from multiple fields, showing real leadership qualities.

Teaching and working methods

Tutorials, seminars and groupwork, problem-based learning and case studies, oral and visual presentations, project work and report writing, \fFieldwork and practicals, professional development planning

Internationalization

All subjects are taught in Romanian.

CURRICULUM

1st YEAR OF STUDY

Code	Course title	Credits	O/V*)	Credits per semester	
				Sem 1	Sem 2
NC-01	Linear Algebra, Analytic and Differential Geometry, and Spherical Trigonometry	6	O	6	
NC-02	Mathematical Analysis	8	O	4	4
NC-03	Physics	6	O	3	3
NC-04	Chemistry	3	O		3
NC-05	Fundamentals of Seamanship + CIS	6	O	3	3
NC-06	Fundamentals of Navigation	13	O	6	7
NC-07	English Language	4	O	2	2
NC-08	Physical Education	4	O	2	2
NC-09	Training in the Field of Study	3	O		3
NC-10	Descriptive Geometry and Technical Drawing	7	O/V	4	3
NC-11	Technical Drawing and Engineering Graphics	7	V/O	4	3
NC-52	Fire Fighting and Fire Prevention	2	V		2
NC-53	Personal Sea Survival Techniques	2	V		2
NC-54	First Aid	2	V	2	
NC-55	Personal Safety and Social Responsibilities	2	V	2	
NC-56	English Language	4	V	2	2
NC-57	2nd Foreign Language	2	V	1	1
TOTAL		Min 60		Min 30	Min 30

2nd YEAR OF STUDY

Code	Course title	Credits	O/V*)	Credits per semester	
				Sem 3	Sem 4
NC-12	Special Mathematics	5	O	5	
NC-13	Numerical Analysis	3	O		3
NC-14	Electrical Measurements and Transducers	3	O	3	
NC-15	Electrical Engineering and Electrical Machines	10	O	6	4
NC-16	Materials Study and Technology	3	O		3

NC-17	Strength of Materials	3	O		3
NC-18	Mechanics and Fluid Mechanics	7	O	3	4
NC-19	Celestial Navigation	10	O	6	4
NC-20	English Language	4	O	2	2
NC-21	Training in the Field of Study	3	O		3
NC-22	Computer Programming and Computer Language	9	O/V	5	4
NC-23	Programming Languages and Techniques	9	V/O	5	4
NC-58	Carriage and Handling of Dangerous Goods	3	V		3
NC-59	MARPOL	3	V		3
NC-60	Competence in Using Survival Techniques, except for Fast Rescue Boats	2	V	2	
NC-61	Maritime English	4	V	2	2
NC-62	2nd Foreign Language	2	V		2
NC-63	Physical Education	4	V	2	2
TOTAL		Min 60		Min 30	Min 30

3rd YEAR OF STUDY

Code	Course title	Credits	O/V ₁	Credits per semester	
				Sem 5	Sem 6
NC-24	Mechanisms and Machine Parts	5	O	5	
NC-25	Electronics	4	O	4	
NC-26	Naval Architecture	9	O	4	5
NC-27	Meteorology and Oceanography	7	O	4	3
NC-28	System Theory and Automatic Control System	4	O		4
NC-29	Radar Navigation, Correction Control	5	O	8	5
NC-30	Waterborne Transport Operations	4	O		4
NC-31	Maritime Communications – GMDSS	4	O		4
NC-32	Training in the Field of Study	2	O		2
NC-33	Navigation Equipment and Systems	8	O/V	5	3
NC-34	Marine Electrical Equipment	8	V/O	5	3
NC-64	General Operator's Certificate – GMDSS - GOC	6	V	4	2
NC-65	Radar Navigation, Radar plotting and ARPA	3	V		3
NC-66	Maritime English	5	V	2	3
NC-67	Physical Education	4	V	2	2
TOTAL		Min 60		Min 30	Min 30

4th YEAR OF STUDY

Code	Course title	Credits	O/V ₁	Credits per semester	
				Sem 7	Sem 8
NC-35	Naval Machinery and Equipment	5	O	5	
NC-36	Management and marketing	3	O	3	
NC-37	Waterborne Transport Operations	4	O	4	
NC-38	SAR	6	O	6	
NC-39	Safety Procedures for Watchkeeping Duties	7	O	3	4
NC-40	Shiphandling and COLREGs	12	O	6	6
NC-41	Maritime Law	3	O		3

NC-42	Damage Control	3	O		3
NC-43	Orthodromic Navigation and Radioelectronic Navigation	6	O		6
NC-44	Specialty Diploma Project		O		-
NC-45	Graduate Diploma	10	O		10
NC-46	Harbors and Waterways	3	O/V	3	
NC-47	Integrated Navigation Systems	5	O/V		5
NC-48	Maritime Commerce	3	O/V		3
NC-49	Shipping Routes and Relations	3	V/O	3	
NC-50	Integrated Navigation	5	V/O		5
NC-51	Improvements in Shipping	3	V/O		3
NC-68	Maritime English	6		3	3
NC-69	Leadership	2		2	
NC-70	Physical Education	4		2	2
TOTAL		Min 60+10		Min 30	Min 30+10

*) O – Mandatory course, V – Optional course