Rector of Co[redacted]

CURRICULUM

Starting with academic year 2022-2023

Faculty: NAVAL ELECTROMECHANICS
Domain: NAVAL ENGINEERING AND NAVIGATION
Specialization MARINE ENGINEERING
Academic degree: MSc
The duration of studies: 2 years
Form of education: full time

THE MISSION OF SPECIALIZATION

Engineers professionalization to acquire skills in the design, construction, assembly, operation, maintenance and repairing of specialized vessels and marine structures, machinery, facilities, systems and equipment, competitive economy relevant standards, knowledge engineering and management having current and adequate view of the marine industry and industry connections

GENERAL OBJECTIVES

Professionalization in marine engineering and navigation through specialized engineering skills and management aimed mainly marine industry - marine structures, specialized ships, machinery, equipment, systems and specific equipment

SPECIFIC OBJECTIVES

Shaping engineer by completing specialized training and management aimed mainly marine industry. Skills of research, development and innovation in marine engineering and navigation.

SKILLS

Professional skills

1. Skills and knowledge in the use and compliance with technical standards and specific technological and design, construction, installation, operation and maintenance of equipment, facilities, systems and equipment specific to the marine industry;
2. Skills and knowledge in specific activities flaw, breakdown, maintenance and repair of making specific marine industry on ships and marine structures;
3. Skills and knowledge in surveillance activities in operation and maintenance of equipment, facilities, systems and equipment specific for the marine industry, on ships and marine platforms structures;
4. Specific skills and knowledge in management and marketing activities in the marine industry. General skills in activities aimed at risk management, value engineering and quality analysis;

Transversal skills

Skills and knowledge of safety rules and regulations, security and intervention to prevent pollution and protect the marine environment;
Preliminary intellectual skills training on the gradual approach of research, development and innovation claimed by further studies in the third cycle - doctoral current profession or the marine industry.

I Requirements for obtaining the master diploma

120 credits at compulsory and optional disciplines

10 credits dissertation exam

Total: 130 credits

II. The structure of the academic year (in weeks)

	Teaching activities		Exam session			Practice	Vacation		
	Sem. I	Sem. II	Wint	Sum	Resits		Wint	Spring	Summ
Year V	14	14	3	3	3	-	2	3	10
Year VI	14	14	3	3	3	-	2	3	-

III. Number of class hours per week

Year	Sem I	Sem II
V	30	28
VI	29	28

IV. How to choose optional courses

Out of the two packages of optional subjects students will choose one that becomes compulsory. The content of optional packages shall be communicated by the specialized department: "Mechanical engineering"

V. Terms of enrolment into the next year. Conditions of promotion. Conditions of return

Under the regulation regarding students professional activity

VI.The graduation exam

Presentation of dissertation paper 10 – 15 July

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CURRICULUM
Year V

Compulsory subjects

Nr. crt	Course title	Course code	Course categ	Course type	Semester I - 14 weeks							Semester II - 14 weeks						
					C	S	L	P	SI	FV	PC	C	S	L	P	SI	FV	PC
1	Marine Electronics and Automatic Control	ME 5.1.1	DI	DS	2	1	-	-	83	C	5	-	-	-	-	0	-	0
2	Optimize Techniques of Investigation Applied in Marine Engineering	ME 5.2.1	DI	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
3	Management Optimization of Energetics Systems	ME 5.3.1	DI	DA	2	-	2	1	55	E	5	-	-	-	-	0	-	0
4	Practice I	ME 5.4.1	DI	DS	-	-	-	7	27	C	5	-	-	-	-	0	-	0
5	Vibration and Dynamics of Propulsion System	ME 5.5.2	DI	DA	-	-	-	-	0	-	0	2	-	2	1	55	E	5
6	Project Management	ME 5.6.2	DI	DS	-	-	-	-	0	-	0	2	-	1	-	83	C	5
7	Leadership and Teamwork in the Engine Room	ME 5.7.2	DI	DS	-	-	-	-	0	-	0	2	-	2	-	69	E	5
8	Practice II	ME 5.8.2	DI	DS	-	-	-	-	0	-	0	-	-	-	8	13	C	5
	Total hours (credit points) required per week DA=study discipline, DS=synthesis discipline				6 20	1	4	9	220 15.714	2E+2C	20	6 20	0	5	9	220 15.714	2E+2C	20

Note: The number of hours of individual study/course/semester is calculated using the formula: SI = CP x 25 – 14 (C+S+L+P)

Optional courses

Nr. crt	Course title	Course code	Course categ	Course type	Semester I - 14 weeks							Semester II - 14 weeks						
					C	S	L	P	SI	FV	PC	C	S	L	P	SI	FV	PC
DIRECTION 1 – Offshore Engineering																		
9	Fatigue Strength of the Offshore oil & gas structures	ME 5.9.1	DO	DA	2	2	-	1	55	E	5	-	-	-	-	0	-	0
10	Dynamic Positioning Operation and Maintenance Management	ME 5.10.1	DO	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
11	Ships dedicated to Offshore oil & gas industry	ME 5.11.2	DO	DS	-	-	-	-	0	-	0	2	-	1	-	83	E	5
12	Offshore Energy Systems	ME 5.12.2	DO	DA	-	-	-	-	0	-	0	2	-	2	1	55	E	5
DIRECTION 2 – Technologies in Marine Engineering																		
9	Shipbuilding Technologies and Marine Inspection	ME 5.9.1	DO	DA	2	2	-	1	55	E	5	-	-	-	-	0	-	0
10	Special Electrical Machines Technologies	ME 5.10.1	DO	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
11	e-Shipping	ME 5.11.2	DO	DS	-	-	-	-	0	-	0	2	-	1	-	83	E	5
12	Design Naval Equipment	ME 5.12.2	DO	DA	-	-	-	-	0	-	0	2	-	2	1	55	E	5
	Total hours (credit points) required per week DA=study discipline, DS=synthesis discipline				4 10	2	2	2	110 7.85714	2E+0C	0	4 8	0	3	1	138 9.85714	2E+0C	5

Free elective disciplines

Nr. crt	Course title	Course code	Course categ	Course type	Semester I - 14 weeks							Semester II - 14 weeks						
					C	S	L	P	SI	FV	PC	C	S	L	P	SI	FV	PC
13	Algorithms and Tools for Cryptography	ME 5.13.1	DF	DA	2	2	-	-	69	C	5	-	-	-	-	0	-	0
14	Maritime Cyber Security Monitoring	ME 5.14.2	DF	DS	-	-	-	-	0	-	0	2	-	2	-	69	C	5
	Total hours (credit points) required per week DA=study discipline, DS=synthesis discipline				2 4	2	0	0	69 4.93	2C	5	2 4	0	2	0	69 4.93	2C	5

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Year VI

Compulsory subjects

Nr. crt	Course title	Course code	Course categ	Course type	Semester I - 14 weeks							Semester II - 14 weeks						
					C	S	L	P	SI	FV	PC	C	S	L	P	SI	FV	PC
1	Developing Maritime English Communication Skills	ME 6.1.1	DI	DA	2	1	-	-	83	C	5	-	-	-	-	0	-	0
2	Marine Structure and Finite Element Analysis	ME 6.2.1	DI	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
3	Risk Analysis and Risk Management	ME 6.3.1	DI	DA	2	1	-	-	58	E	4	-	-	-	-	0	-	0
4	Ethics and Academic Integrity	ME 6.4.1	DI	DA	1	-	-	-	36	C	2	-	-	-	-	0	-	0
5	Practice III	ME 6.5.1	DI	DS	-	-	-	7	2	C	4	-	-	-	-	0	-	0
6	Maritime Power Plant	ME 6.6.2	DI	DA	-	-	-	-	0	-	0	2	-	2	-	69	E	5
7	Non-destructive Testing in Marine Engineering	ME 6.7.2	DI	DA	-	-	-	-	0	-	0	2	2	-	-	69	C	5
8	Practice for Dissertation Preparation	ME 6.8.2	DI	DS	-	-	-	-	0	-	0	-	-	-	12	82	C	10
	Total hours (credit points) required per week				7	2	2	8	234	2E+3C	20	4	2	2	12	220	1E+2C	20
	DA=study discipline, DS=synthesis discipline				19				16.7143			20				15.7143		
	Dissertation Exam																1E	10

Optional courses

Nr. crt	Course title	Course code	Course categ	Course type	Semester I - 14 weeks							Semester II - 14 weeks						
					C	S	L	P	SI	FV	PC	C	S	L	P	SI	FV	PC
DIRECTION 1 – Offshore Engineering																		
9	Underwater Technologies	ME 6.9.1	DO	DA	2	2	-	1	55	E	5	-	-	-	-	0	-	0
10	Reliability and Diagnosis in Offshore oil & gas industry	ME 6.10.1	DO	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
11	Release Technology Submarine Pipeline	ME 6.11.2	DO	DS	-	-	-	-	0	-	0	2	-	1	-	83	E	5
12	Special and offshore drilling	ME 6.12.2	DO	DA	-	-	-	-	0	-	0	2	-	2	1	55	E	5
DIRECTION 2 – Technologies in Marine Engineering																		
9	Advanced Engineering Mechanics	ME 6.9.1	DO	DA	2	2	-	1	55	E	5	-	-	-	-	0	-	0
10	Modern Control Theory	ME 6.10.1	DO	DS	2	-	2	1	55	E	5	-	-	-	-	0	-	0
11	Material Welding and Component Failure Analysis	ME 6.11.2	DO	DS	-	-	-	-	0	-	0	2	-	1	-	83	E	5
12	Oil Monitoring Techniques and Fault Diagnosis	ME 6.12.2	DO	DA	-	-	-	-	0	-	0	2	-	2	1	55	E	5
	Total hours (credit points) required per week				4	2	2	2	110	2E+0C	0	4	0	3	1	138	2E+0C	5
	DA=study discipline, DS=synthesis discipline				10				7.86			8				9.86		

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BILANŢ GENERAL

	Nr. de ore	%	Nr. de credite	%	Standard ARACIS
Total discipline obligatorii	1610		120		
Discipline complementare (DC)					< 20%
Discipline de sinteză (DS)	980	60.87	69	57.5	
Discipline de aprofundare (DA)	630	39.13	51	42.5	
Discipline facultative (DF)	168		10		
Ore curs	546				
Ore aplicaţii (seminarii, lucrări de laborator, proiecte)	588				
Ore aplicative (seminarii, lucrări de laborator, proiecte, practică profesională/(de proiectare) şi practică/activitate de cercetare)	1064				
Ore practică incluzând practica pentru elaborarea lucrării de disertaţie	476				
Raport ore curs/ore aplicaţii (discipline integral asistate)	0.93				1/1 (±20%)

	Nr. ore		Total		Număr credite	
	An I	An II	ore	%	An I	An II
Activităţi integral asistate	602	532	1134		50	46
Activităţi asistate parţial	210	266	476		10	14
Practica de specialitate	210	98	308		5	4
Practica pentru elaborarea disertaţiei		168	168			10