

Curriculum Series 2010-2014

MARITIME UNIVERSITY OF CONSTANTA
 Faculty: NAVAL ELECTROMECHANICS
 Field: NAVAL ENGINEERING AND NAVIGATION
 Undergraduate Programme: NAVAL ELECTROMECHANICS
 Undergraduate title: Bachelor of Science
 Period of study: 4 years
 Attendance: full time

I Requirements for getting Bachelor of Science Diploma

240 credits at compulsory and optional disciplines

In order to apply for a teaching position (secondary, highschool, college) the graduate must hold a graduation certificate issued by the "Department for training teaching staff".

II. Structure of academic year (weeks)

	Teaching activities		Session of exams			Semestrial practical training	Vacations		
	1st sem	2 nd sem	Winter	Summer	Resits		winter	spring	summer
1 st year	14	14	4	4	2	2 h/week	2	1	12
2 nd year	14	14	4	4	2	2 h/week	2	1	12
3 rd year	14	14	4	4	2	2 h/week	2	1	12
4 th year	14	14	4	3	1	2 h/week	2	1	-

III. No. of hours per week

Year	Semestrel I	Semestrel II
I	28	28
II	28	28
III	28	28
IV	28	28

IV. Way of choosing optional courses

Of the two packages of optional disciplines the student will choose one, and this becomes compulsory. The contents of optional packages will be announced by the "Naval mechanical engineering" department.

V. Requirements for the following year's registration. Requirements for passing exams. Requirements for re-applying

In conformity with the academic regulation

VI. Bachelor of Science Degree: 1st June- 15th July

RECTOR
Prof. Ph. D. Cornel PANAIT

DEAN
Prof. Ph. D. George CĂRUNTU

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CURRICULUM

1ST YEAR

COMPULSORY DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
1	Mathematical Analysis I, II	EM 1.1.1; 1.1.2	DI	DF	3	2	-	-	E	6	2	2	-	-	E	5
2	Linear algebra, analytic and differential geometry	EM 1.2.1	DI	DF	2	2	-	-	E	4	-	-	-	-	-	-
3	Computer Science and language programming	EM 1.3.1; 1.3.2	DI	DF	2	1	1	-	C	4	2	1	1	-	C	4
4	Physics	EM 1.4.1	DI	DF	2	1	1	-	E	4	-	-	-	-	-	-
5	Chemistry	EM 1.5.1	DI	DF	2	-	1	-	E	4	-	-	-	-	-	-
6	Special Mathematics I	EM 1.6.2	DI	DF	-	-	-	-	-	-	3	2	-	-	E	5
7	Descriptive geometry	EM 1.7.2	DI	DF	-	-	-	-	-	-	1	-	2	-	C	4
8	Physical Education I,II	EM 1.8.1; 1.8.2	DI	DC	-	1	-	-	C	1	-	1	-	-	C	1
9	English I	EM 1.9.1	DI	DC	-	2	-	-	C	2				-		
10	Maritime English and Communication issues on board I	EM 1.10.2	DI	DC	-	-	-	-	-	-	-	2	-	-	C	2
Total hours (compulsory credit points per week)					11	9	3	-	4E+3C	25	8	8	3	-	2E+4C	21
					23			19								

OPTIONAL DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
Package A																
11	Introduction to naval architecture	EM 1.11.1	DO	DD	1	1	-	-	C	2	-	-	-	-	-	-
12	Deck Systems	EM 1.12.1	DO	DD	2	1	-	-	C	3	-	-	-	-	-	-
13	Technological methods and procedures	EM 1.13.2	DO	DD	-	-	-	-	-	-	3	1	1	-	E	5
14	Use of computers and internet services	EM 1.14.2	DO	DF	-	-	-	-	-	-	2	-	2	-	E	4
Package B																
11	Introduction to naval mechanical engineering	EM 1.11.1	DO	DD	1	1	-	-	C	2	-	-	-	-	-	-
12	Seamanship	EM 1.12.1	DO	DD	2	1	-	-	C	3	-	-	-	-	-	-
13	Materials science and engineering	EM 1.13.2	DO	DD	-	-	-	-	-	-	3	1	1	-	E	5
14	Technical drawing and Computer-Aided Design I	EM 1.14.2	DO	DF	-	-	-	-	-	-	2	-	2	-	E	4
Total hours (compulsory credit points per week)					3	2	-	-	2C	5	5	1	3	-	2E	9
					5				9							

FREE ELECTIVE DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
15	Medical first aid	EM 1.15.1	DF	DS	1	-	1	-	C	2	-	-	-	-	-	-
16	Fire prevention and fighting – advanced level	EM 1.16.1; 1.16.2	DF	DS	1	-	1	-	C	2	1	-	1	-	E	2
17	Personal survival techniques? Personal safety and social responsibilities on board ships	EM 1.17.2	DF	DS	-	-	-	-	-	-	1	-	1	-	E	1
18	Onboard training	EM 1.18.2	DF	DS	-	-	-	-	-	-	4 sapt.x56 ore/sapt.				C	2
Total hours (compulsory credit points per week)					2	-	2	-	2C	4	2	-	2	-	2E+1C	5
					4				4							

2nd Year

COMPULSORY DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
1	Special Mathematics II	EM 2.1.1	DI	DF	1	1	-	-	E	3	-	-	-	-	-	-
2	Numerical Methods	EM 2.2.1	DI	DF	2	1	-	-	E	4	-	-	-	-	-	-
2	Technical drawing and Computer-Aided Design II	EM 2.3.1	DI	DF	-	1	2	-	C	3	-	-	-	-	-	-
4	Mechanics I,II	EM 2.4.1; 2.4.2	DI	DD	3	1	1	-	E	5	1	-	2	-	C	4
5	Strength of materials I, II	EM 2.5.1; 2.5.2	DI	DD	4	1	1	-	E	6	2	1	1	-	E	4
6	Machine Elements Design I	EM 2.6.2	DI	DD	-	-	-	-	-	-	3	1	1	-	E	5
7	Thermodynamics I	EM 2.7.2	DI	DD	-	-	-	-	-	-	3	1	1	-	E	5
8	Physical Education III, IV	EM 2.8.1; 2.8.2	DI	DC	-	1	-	-	C	1	-	1	-	-	C	1
9	Maritime English and Communication issues on board II	EM 2.9.1	DI	DC	-	2	-	-	C	2	-	-	-	-	-	-
10	English II	EM 2.10.2	DI	DC	-	-	-	-	-	-	-	2	-	-	C	1
11	Communication	EM 2.11.1	DI	DC	-	1	-	-	C	1	-	-	-	-	-	-
12	Practical training II	EM 2.12.2	DI	DD							3 sapt.x30 ore/sapt.				C	2
Total hours (compulsory credit points per week)					10	9	4	-	4E+4C	25	9	6	5	-	3E+4C	22
					23			20								

OPTIONAL DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
Package A																
13	Electrotehnics and electrical machines	EM 2.13.1; 2.13.2	DO	DD	3	1	1	-	E	5	-	-	-	-	-	-
14	Navigation concepts and hydrometeorology	EM 2.14.2	DO	DD	-	-	-	-	-	-	2	1	1	-	C	4
15	Electronics and automation	EM 2.15.2	DO	DD	-	-	-	-	-	-	2	1	1	-	E	4
Package B																
13	Electrotechnics	EM 2.13.1	DO	DD	3	1	1	-	E	5	-	-	-	-	-	-
14	Mechanisms	EM 2.14.2	DO	DD	-	-	-	-	-	-	2	1	1	-	C	4
15	Materials engineering and dimensional control	EM 2.15.2	DO	DD	-	-	-	-	-	-	2	1	1	-	E	4
Total hours (compulsory credit points per week)					3	1	1	-	1E	5	4	2	2	-	1E+1C	8
					5						8					

FREE ELECTIVE DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
16	Transport and handling of dangerous cargo	EM 2.16.1	DF	DS	1	-	1	-	C	2	-	-	-	-	-	-
17	Marine environment pollution prevention. MARPOL	EM 2.17.1	DF	DS	1	-	1	-	C	2	-	-	-	-	-	-
18	Proficiency in survival craft and rescue boats	EM 2.18.1	DF	DS	1	-	1	-	C	2	-	-	-	-	-	-
19	Onboard training	EM 2.19.2	DF	DS	-	-	-	-	-	-	4 sapt.x56 ore/sapt.				C	2
Total hours (compulsory credit points per week)					3	-	3	-	3C	6	-	-	-	-	1C	2
					6						-					

3rd Year

COMPULSORY DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
1	Theory and construction of ships	EM 3.1.1	DI	DD	3	1	-	1	C	5	-	-	-	-	-	-
2	Thermodynamics II	EM 3.2.1	DI	DD	3	1	1	-	E	6	-	-	-	-	-	-
3	Machine Elements Design II	EM 3.3.1	DI	DD	3	-	1	1	E	6	-	-	-	-	-	-
4	Applied electronics	EM 3.4.1	DI	DD	2	-	1	-	E	3	-	-	-	-	-	-
5	Fluid mechanics	EM 3.5.1	DI	DD	3	1	1	-	E	5	-	-	-	-	-	-
6	Electrical measurements and transducers	EM 3.6.2	DI	DD	-	-	-	-	-	-	3	-	1	-	E	3
7	Theory of systems and automatic adjustments	EM 3.7.2	DI	DD	-	-	-	-	-	-	2	-	1	-	E	3
8	Practical training III	EM 3.8.2	DI	DS	-	-	-	-	-	-	3 sapt.x30 ore/sapt.				C	2
Total hours (compulsory credit points per week)					14	3	4	2	4E+1C	25	5	-	2	-	2E+1C	8
					23			7								

OPTIONAL DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
Package A																
9	Electrical action systems	EM 3.9.1	DO	DD	3	1	1	-	E	5	-	-	-	-	-	-
10	Advancement resistance and propulsion	EM 3.10.2	DO	DS	-	-	-	-	-	-	3	-	1	1	E	6
11	Radio electronic equipments and maritime communication	EM 3.11.2	DO	DD	-	-	-	-	-	-	4	-	1	-	E	4
12	Navigation in special conditions	EM 3.12.2	DO	DS	-	-	-	-	-	-	3	-	1	1	E	6
13	Bridge team management	EM 3.13.2	DO	DS	-	-	-	-	-	-	2	1	-	-	C	3
14	Naval electrical equipment	EM 3.14.2	DO	DS	-	-	-	-	-	-	2	-	1	-	C	3
Package B																
9	Machines and electrical drives	EM 3.9.1	DO	DD	3	1	1	-	E	5	-	-	-	-	-	-
10	Internal Combustion Engines Processes and Characteristics I	EM 3.10.2	DO	DS	-	-	-	-	-	-	3	-	1	1	E	6
11	Onboard systems I	EM 3.11.2	DO	DD	-	-	-	-	-	-	4	-	1	-	E	4
12	Marine hydraulic machines	EM 3.12.2	DO	DS	-	-	-	-	-	-	3	-	1	1	E	6
13	International maritime law	EM 3.13.2	DO	DS	-	-	-	-	-	-	2	1	-	-	C	3
14	Naval electrical devices	EM 3.14.2	DO	DS	-	-	-	-	-	-	2	-	1	-	C	3
Total hours (compulsory credit points per week)					3	1	1	-	1E	5	14	1	4	2	3E+2C	22
					5						21					

FREE ELECTIVE DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
15	English III	EM 3.15.2	DF	DC	-	-	-	-	-	-	-	2	-	-	C	2
16	Onboard training	EM 3.16.2	DF	DS	-	-	-	-	-	-	4 sapt.x56 ore/sapt.				C	2
Total hours (compulsory credit points per week)					-	-	-	-	-	-	-	2	-	-	2C	4
					-						2					

4th Year

COMPULSORY DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
1	Naval electrical installations	EM 4.1.1	DI	DS	2	-	1		E	3	-	-	-		-	-
2	Control of naval propulsion systems	EM 4.2.1	DI	DS	2	-	1		E	4	-	-	-		-	-
3	English IV	EM 4.3.1	DI	DC	-	2	-		C	2	-	-	-		-	-
4	Management and marketing	EM 4.4.2	DI	DS	-	-	-		-	-	2	1	-		C.	3
5	Onboard systems II	EM 4.5.2	DI	DD	-	-	-		-	-	2	-	1	1	E	3
6	Preparation of Bachelor of Science license	EM 4.6.2	DI	DS	-	-	-		-	-	2 sapt.x30 ore/sapt.			C	5	
7	License exam	EM 4.7.2	DI	DS											(10)	
Total hours (compulsory credit points per week)					4	2	2		2E+1C	9	4	1	1	1	1E+2C	11
					8			7								

OPTIONAL DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
Package A																
7	Propulsion power plants	EM 4.7.1	DO	DS	3	-	2	-	E	5	-	-	-	-	-	-
8	Waterways and naval transport relations	EM 4.8.1	DO	DS	2	-	1	-	C	3	-	-	-	-	-	-
9	Ship's management and administration	EM 4.9.1; 4.9.2	DO	DD	4	-	1	1	E	7	4	-	1	1	E	5
10	Estimated and costal navigation	EM 4.10.1; 4.10.2	DO	DS	4	-	1	1	E	6	4	-	2	-	E	6
11	Ship's commercial exploitation	EM 4.11.2	DO	DS	-	-	-	-	-	-	4	-	2	-	C	5
12	Maritime transport theory and techniques	EM 4.12.2	DO	DS	-	-	-	-	-	-	2	-	1	-	E	3
Package B																
7	Internal Combustion Engines Processes and Characteristics II	EM 4.7.1	DO	DS	3	-	2	-	E	5	-	-	-	-	-	-
8	Marine refrigerating plants	EM 4.8.1	DO	DS	2	-	1	-	C	3	-	-	-	-	-	-
9	Internal combustion engines components and ancillary systems I,II	EM 4.9.1; 4.9.2	DO	DD	4	-	1	1	E	7	4	-	1	1	E	5
10	Steam generators, steam and gas turbines I,II	EM 4.10.1; 4.10.2	DO	DS	4	-	1	1	E	6	4	-	2	-	E	6
11	Exploitation, repair and maintenance of internal combustion engines	EM 4.11.2	DO	DS	-	-	-	-	-	-	4	-	2	-	C	5
12	Noise and vibrations on board	EM 4.12.2	DO	DS	-	-	-	-	-	-	2	-	1	-	E	3
Total hours (compulsory credit points per week)					13	-	5	2	3E+1C	21	14	-	6	1	3E+1C	19
					20				21							

FREE ELECTIVE DISCIPLINES

No	Discipline name	Discipline Code	Categ. disc.	Type disc.	1 st Semester - 14 weeks						2 nd Semester - 14 weeks					
					C	S	L	P	Assess type	Credit points	C	S	L	P	Assess type	Credit points
13	Onboard training	EM 4.13.2	DF	DS	-	-	-	-	-	-	12 sapt.x56 ore/sapt.				C	2
Total hours (compulsory credit points per week)					-	-	-	-	-	-	-	-	-	-	1C	2

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Prof. Ph. D. Nicolae ZIDARU

General Balance/ Package B

1st Stage

No.	Discipline	No. of hours	%	No. of credits	%
1	Compulsory	1280	77.2	93	77
2	Optional	378	22.8	27	23
3	Free elective	644	-	17	-
4	Total number of optional and compulsory hours	1658	100	120	100

2nd Stage

No.	Discipline	No. of hours	%	No. of credits	%
1	Compulsory	780	45.4	50	42
2	Optional	938	54.6	70	58
3	Free elective	476	-	6	-
4	Total number of optional and compulsory hours	1718	100	120	100

GENERAL

No.	Discipline	No. of hours	%	No. of credits	%
1	Compulsory	2060	61.02	143	60
2	Optional	1316	38.98 (min. 10%)	97	40
3	Free elective	1120	33.18	-	-
4	Total number of optional and compulsory hours	3376 (min. 3150, max. 3600)	100	240	100

DISTRIBUTION OF FUNDAMENTAL, DOMAIN SPECIFIC, SPECIALTY AND COMPLEMENTARY DISCIPLINES

Discipline types	No. of hours	
Fundamental Discipline (DF)	672	19.90% (min. 17%)
Domain Specific Disciplines (DD)	1588	47.04% (min. 38%)
Specialty Disciplines (DS)	906	26.84% (min. 25%)
Complementary Disciplines (DC)	210	6.22% (max. 8%)
Total	3376	100