

APPROVED  
Rector of Constanta Maritime University**CURRICULUM**  
Starting with academic year 2024-2025

Study program: MARINE ENGINEERING  
Fundamental domain: ENGINEERING SCIENCES  
Bachelor's field: MARINE ENGINEERING AND NAVIGATION  
Faculty: MARINE ENGINEERING  
Academic degree: Bachelor of Science  
The duration of studies: 4 years  
Form of education: full time

**The mission of study program**

Emphasizing the importance of the higher technical education within an extended area which should be flexible, interactive and continuous, according to the European and worldwide requirements in education, preserving national academic traditions. Performing the educational process at a higher level of continuous professional training of specialists in the field and generating and transferring knowledge towards society training future specialists in the maritime and multimodal field and being an unfailing initiator of innovative and creative solutions for regional and European development of transportation.

**The general objectives of study program**

Training professional engineers in order to acquire competences in designing, building, assembling, exploiting, maintaining and repairing ships, special ships, marine structures and installations, systems and naval equipment (on the quay side or onboard ships), corresponding to the competition economy requirements, naval professionals with engineering, scientific, managerial and complementary knowledge adequate to the present and future needs for naval, shipbuilding and transport perspective and for corresponding industrial sectors. Creating the necessary conditions for developing the relation between maritime education and the Romanian and European social and economic field and maintaining a competitive educational offer developed according to the society's demands having as a target to emphasise the importance of scientific research in the activities by increasing quality in the didactic activity, attaining more satisfaction from students, graduates and employers and performing student centred education.

**The specific objectives of study program**

1. University education for bachelor degree graduates in the field of the Navigation and Marine Engineering, corresponding to the European competitive economy demands, as engineers having the level of scientific, engineering, managerial and complementary knowledge as well as the adequate practical skills for the present-day needs and also for the future ones for the naval transport industry, respectively maritime, river and offshore shipbuilding.
2. Extending the training process for specialized engineers in the field of marine engineering and navigation from the perspective of providing the technical-economical and managerial ability necessary for approaching design, fulfilment and optimal exploitation, completely safely, of constructions, systems and equipment specific for the offshore, maritime and river shipbuilding, subjected to European criteria, respectively on a global level, of quality certification.
3. Initiating, in the future, a programme for fundamental and applied scientific research, specific for the marine engineering and navigation field and the corresponding ones, compatible with the contemporary requests and necessities, using the whole creative potential of the teaching staff, master degree students and bachelor degree students along with that of famous specialists in this highly requested field with a better and better perspective in Romania, from the point of view of foreign students who come here to study in this field in Constanta Maritime University.
4. Creating the necessary conditions for development, in perspective, the third level of PhD studies in the correspondent field in order to provide completion of the specialized engineering field in marine engineering and navigation with multidisciplinary higher scientific research prerequisites.
5. Continuous improvement of the human didactic and scientific potential (teaching staff and researchers with university and post university adequate training) and material (advanced facilities educational venues resulted from internal and external sources), in order to fulfil requests presented in objectives 1, 2, 3 și 4.

**Skills****The professional skills**

Capacity to identify, analyze and describe from a functional point of view the elements of the electromechanical systems in the maritime field; Capacity to analyze physical processes involved in the running of maritime electromechanical systems; Capacity to design electromechanical systems in the maritime field; Capacity to ensure maintenance of the maritime electromechanical systems; Capacity to safely run maritime electromechanical systems; Capacity to communicate with experts in other fields, connected to the activities in the field of marine engineering and navigation

**The transversal skills**

Objective self-evaluation of the continuous professional development and the effective use of linguistic abilities, information technology knowledge and communication with a view to the personal and professional development and better insertion on the labour market and adjustment to the dynamics of its requirements; Efficient use of techniques of human inter-relationships within a multicultural environment, on different hierarchic levels, of written and oral communication and efficient cooperation with experts in multiple fields; Planning, organization and leadership within a team and proof-making of communication abilities; Maintaining a physical fitness for on board activities; Competence in maritime laws in force

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Form of education: full time

RECTOR  
Assoc. Prof. Ph. D. Gabriel-Mărgărit RAICU

**CURRICULUM**  
Year I

**COMPULSORY SUBJECTS**

| Nr. crt                   | Course title                                       | Course code | Course category | Course type | Semester I - 14 weeks |   |   |   |       |           |                | Semester II - 14 weeks |   |   |   |       |           |                |
|---------------------------|--|-------------|-----------------|-------------|-----------------------|---|---|---|-------|-----------|----------------|------------------------|---|---|---|-------|-----------|----------------|
|                           |  |             |                 |             | C                     | S | L | P | SI    | Exam form | Credits points | C                      | S | L | P | SI    | Exam form | Credits points |
| 1                         | Mathematical Analysis I                            | XM 1.1.1    | DI              | DF          | 3                     | 2 | - | - | 30    | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 2                         | Linear algebra, analytic and differential geometry | XM 1.2.1    | DI              | DF          | 2                     | 2 | - | - | 44    | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 3                         | Computer Science and language programming I        | XM 1.3.1    | DI              | DF          | 2                     | - | 2 | - | 44    | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 4                         | Physics  | XM 1.4.1    | DI              | DF          | 2                     | - | 2 | - | 44    | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 5                         | Chemistry  | XM 1.5.1    | DI              | DF          | 2                     | - | 1 | - | 58    | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 6                         | Descriptive geometry                               | XM 1.6.1    | DI              | DF          | 1                     | - | 1 | - | 72    | C         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 7                         | Multiculturalism                                   | XM 1.7.1    | DI              | DC          | 1                     | 1 | - | - | 22    | C         | 2              | -                      | - | - | - | 0     | -         | 0              |
| 8                         | Modern languages (English) I                       | XM 1.8.1    | DI              | DC          | -                     | 1 | - | - | 61    | C         | 3              | -                      | - | - | - | 0     | -         | 0              |
| 9                         | Physical Education and sport I                     | XM 1.9.1    | DI              | DC          | -                     | 1 | - | - | 11    | C         | 1              | -                      | - | - | - | 0     | -         | 0              |
| 10                        | Mathematical Analysis II                           | XM 1.10.2   | DI              | DF          | -                     | - | - | - | 0     | -         | 0              | 2                      | 2 | - | - | 44    | E         | 4              |
| 11                        | Computer Science and language programming II       | XM 1.11.2   | DI              | DF          | -                     | - | - | - | 0     | -         | 0              | 2                      | - | 1 | - | 58    | E         | 4              |
| 12                        | Technical drawing and infographics                 | XM 1.12.2   | DI              | DF          | -                     | - | - | - | 0     | -         | 0              | 2                      | - | 2 | - | 44    | C         | 4              |
| 13                        | Modern languages (English) II                      | XM 1.13.2   | DI              | DC          | -                     | - | - | - | 0     | -         | 0              | -                      | 2 | - | - | 47    | C         | 3              |
| 14                        | Physical Education and sport II                    | XM 1.14.2   | DI              | DC          | -                     | - | - | - | 0     | -         | 0              | -                      | 1 | - | - | 11    | C         | 1              |
| 15                        | General Economy                                    | XM 1.15.2   | DI              | DC          | -                     | - | - | - | 0     | -         | 0              | 1                      | 1 | - | - | 47    | C         | 3              |
| 16                        | Advanced Mathematics                               | XM 1.16.2   | DI              | DF          | -                     | - | - | - | 0     | -         | 0              | 2                      | 2 | - | - | 44    | E         | 4              |
| Total hours (CP) per week |  |             |                 |             | 13                    | 7 | 6 | 0 | 386   | 5E+4C     | 30             | 9                      | 8 | 3 | 0 | 295   | 3E+4C     | 23             |
|                           |  |             |                 |             | 26                    |   |   |   | 27.57 |           |                | 20                     |   |   |   | 21.07 |           |                |

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

DF - fundamental disciplines DD - Domain Disciplines DS - specialty disciplines DC - complementary disciplines

DI - obligatory disciplines DO - elective disciplines DF- optional disciplines

DEAN  
Assoc. Prof. Dr. [REDACTED] TAN

DIRECTOR OF STUDIES  
Lecturer Ph. D. Cătălin FAITĂR

**ELECTIVE SUBJECTS**

| Nr. crt                   | Course title                                  | Course code | Course category | Course type | Semester I - 14 weeks |   |   |   |    |           |                | Semester II - 14 weeks |   |   |   |    |           |                |
|---------------------------|---|-------------|-----------------|-------------|-----------------------|---|---|---|----|-----------|----------------|------------------------|---|---|---|----|-----------|----------------|
|                           |   |             |                 |             | C                     | S | L | P | SI | Exam form | Credits points | C                      | S | L | P | SI | Exam form | Credits points |
| <b>Package A</b>          |   |             |                 |             |                       |   |   |   |    |           |                |                        |   |   |   |    |           |                |
| 17                        | Naval training                                | XM 1.17.2   | DO              | DD          | -                     | - | - | - | 0  | -         | 0              | 2                      | 1 | - | - | 33 | C         | 3              |
| 18                        | Mechanical processing and dimensional control | XM 1.18.2   | DO              | DD          | -                     | - | - | - | 0  | -         | 0              | 2                      | 2 | - | - | 44 | E         | 4              |
| <b>Package B</b>          |   |             |                 |             |                       |   |   |   |    |           |                |                        |   |   |   |    |           |                |
| 17                        | Seamanship                                    | XM 1.17.2   | DO              | DD          | -                     | - | - | - | 0  | -         | 0              | 2                      | 1 | - | - | 33 | C         | 3              |
| 18                        | Materials science and engineering             | XM 1.18.2   | DO              | DD          | -                     | - | - | - | 0  | -         | 0              | 2                      | 2 | - | - | 44 | E         | 4              |
| Total hours (CP) per week |   |             |                 |             | 0                     | 0 | 0 | 0 | 0  | 0E+0C     | 0              | 4                      | 3 | 0 | 0 | 77 | 1E+1C     | 7              |
|                           |   |             |                 |             | 0                     |   |   | 0 | 7  |           |                | 5.50                   |   |   |   |    |           |                |

**OPTIONAL SUBJECTS**

| Nr. crt | Course title  | Course code | Course category | Course type | Semester I - 14 weeks |   |   |      |    |           |                | Semester II - 14 weeks |   |   |   |        |           |                |
|---------|---|-------------|-----------------|-------------|-----------------------|---|---|------|----|-----------|----------------|------------------------|---|---|---|--------|-----------|----------------|
|         |   |             |                 |             | C                     | S | L | P    | SI | Exam form | Credits points | C                      | S | L | P | SI     | Exam form | Credits points |
| 19      | Medical first aid   | XM 1.19.1   | DF              | DS          | 1                     | - | 1 | -    | 22 | C         | 2              | -                      | - | - | - | 0      | -         | 0              |
| 20      | Fire prevention and fighting  | XM 1.20.1   | DF              | DS          | 1                     | - | 1 | -    | 22 | C         | 2              | -                      | - | - | - | 0      | -         | 0              |
| 21      | Marine culture in European civilization   | XM 1.21.1   | DF              | DC          | 2                     | 1 | - | -    | 8  | C         | 2              | -                      | - | - | - | 0      | -         | 0              |
| 22      | Personal survival techniques  | XM 1.22.2   | DF              | DS          | -                     | - | - | -    | 0  | -         | 0              | 1                      | - | 1 | - | 22     | E         | 2              |
| 23      | Personal safety and social responsibilities on board ships                                    | XM 1.23.2   | DF              | DS          | -                     | - | - | -    | 0  | -         | 0              | 1                      | - | 1 | - | 22     | E         | 2              |
| 24      | Security awareness training & security training for seafarers with designated security duties | XM 1.24.2   | DF              | DS          | -                     | - | - | -    | 0  | -         | 0              | 1                      | 1 | - | - | 22     | C         | 2              |
| 25      | Maritime English Basics for Beginners I, II   | XM 1.25.1,2 | DF              | DC          | -                     | 2 | - | -    | 47 | C         | 3              | -                      | 2 | - | - | 47     | C         | 3              |
| 26      | Onboard training I  | XM 1.26.2   | DF              | DS          | -                     | - | - | -    | 0  | -         | 0              | 4 weeks x56 hours/week |   |   |   | C      | 2         |                |
| 27      | Volunteering I, II  | XM 1.27.1;2 | DF              | DC          | 14 weeks x1 hour/week |   |   |      |    | C(A/R)    | 2              | 14 weeks x1 hour/week  |   |   |   | C(A/R) | 2         |                |
|         |   |             |                 |             | 4                     | 3 | 2 | 0    | 99 | 0E+5C     | 11             | 3                      | 3 | 2 | 0 | 113    | 2E+4C     | 13             |
|         |   |             |                 |             | 9                     |   |   | 7.07 | 8  |           |                | 8.07                   |   |   |   |        |           |                |

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DIRECTOR OF STUDIES

Year II

din planul de învățământ începând cu anul universitar 2023-2024

COMPULSORY SUBJECTS

| Nr. crt                   | Course title                               | Course code | Course category | Course type | Semester I - 14 weeks |   |   |        |     |           |                | Semester II - 14 weeks |   |   |   |     |           |                |
|---------------------------|--|-------------|-----------------|-------------|-----------------------|---|---|--------|-----|-----------|----------------|------------------------|---|---|---|-----|-----------|----------------|
|                           |  |             |                 |             | C                     | S | L | P      | SI  | Exam form | Credits points | C                      | S | L | P | SI  | Exam form | Credits points |
| 1                         | Numerical Methods                          | XM 2.1.1    | DI              | DF          | 2                     | - | 1 | -      | 58  | E         | 4              | -                      | - | - | - | 0   | -         | 0              |
| 2                         | Mechanics I                                | XM 2.2.1    | DI              | DD          | 2                     | 1 | - | -      | 83  | E         | 5              | -                      | - | - | - | 0   | -         | 0              |
| 3                         | Strength of materials I                    | XM 2.3.1    | DI              | DD          | 4                     | 1 | 1 | -      | 41  | E         | 5              | -                      | - | - | - | 0   | -         | 0              |
| 4                         | Modern languages (English) III             | XM 2.4.1    | DI              | DC          | -                     | 2 | - | -      | 47  | C         | 3              | -                      | - | - | - | 0   | -         | 0              |
| 5                         | Communication                              | XM 2.5.1    | DI              | DC          | -                     | 1 | - | -      | 36  | C         | 2              | -                      | - | - | - | 0   | -         | 0              |
| 6                         | Physical Education and sport III           | XM 2.6.1    | DI              | DC          | -                     | 1 | - | -      | 11  | C         | 1              | -                      | - | - | - | 0   | -         | 0              |
| 7                         | Computer - Aided Design                    | XM 2.7.1    | DI              | DF          | 2                     | - | 2 | -      | 44  | E         | 4              | -                      | - | - | - | 0   | -         | 0              |
| 8                         | Electrotechnics                            | XM 2.8.1    | DI              | DD          | 2                     | 1 | - | -      | 33  | E         | 3              | -                      | - | - | - | 0   | -         | 0              |
| 9                         | Mechanics II                               | XM 2.9.2    | DI              | DD          | -                     | - | - | -      | 0   | -         | 0              | 3                      | 1 | - | - | 69  | E         | 5              |
| 10                        | Strength of materials II                   | XM 2.10.2   | DI              | DD          | -                     | - | - | -      | 0   | -         | 0              | 2                      | 1 | 1 | - | 69  | E         | 5              |
| 11                        | Machine Elements Design I                  | XM 2.11.2   | DI              | DD          | -                     | - | - | -      | 0   | -         | 0              | 4                      | 1 | - | 1 | 41  | E         | 5              |
| 12                        | Thermodynamics I                           | XM 2.12.2   | DI              | DD          | -                     | - | - | -      | 0   | -         | 0              | 3                      | 2 | - | - | 30  | E         | 4              |
| 13                        | Modern languages (English) IV              | XM 2.13.2   | DI              | DC          | -                     | - | - | -      | 0   | -         | 0              | -                      | 3 | - | - | 33  | C         | 3              |
| 14                        | Physical Education and sport IV            | XM 2.14.2   | DI              | DC          | -                     | - | - | -      | 0   | -         | 0              | -                      | 1 | - | - | 11  | C         | 1              |
| 15                        | Practical training in the field of studies | XM 2.15.2   | DI              | DD          | -                     | - | - | -      | 0   | -         | 0              | 3 weeks x30 hours/week |   |   |   |     | C         | 4              |
| Total hours (CP) per week |  |             |                 |             | 12                    | 7 | 4 | 0      | 353 | 5E+3C     | 27             | 12                     | 9 | 1 | 1 | 253 | 4E+3C     | 27             |
|                           |  |             |                 |             | 23                    |   |   | 25.214 | 23  |           |                | 18.071                 |   |   |   |     |           |                |

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

DF - disciplines DS - specialty disciplines DC - complementary disciplines DI - obligatory disciplines DO - elective disciplines DF- optional disciplines

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**ELECTIVE SUBJECTS**

| Nr. crt                   | Course title                     | Course code | Course category | Course type | Semester I - 14 weeks |   |   |      |    |           |                | Semester II - 14 weeks |   |   |      |    |           |                |
|---------------------------|----------------------------------|-------------|-----------------|-------------|-----------------------|---|---|------|----|-----------|----------------|------------------------|---|---|------|----|-----------|----------------|
|                           |                                  |             |                 |             | C                     | S | L | P    | SI | Exam form | Credits points | C                      | S | L | P    | SI | Exam form | Credits points |
| <b>Package A</b>          |                                  |             |                 |             |                       |   |   |      |    |           |                |                        |   |   |      |    |           |                |
| 16                        | The basics of navigation         | XM 2.16.1   | DO              | DD          | 2                     | 1 | 1 | -    | 19 | E         | 3              | -                      | - | - | -    | -  | -         | 0              |
| 17                        | Equipment and navigation systems | XM 2.17.2   | DO              | DD          | -                     | - | - | -    | 0  | -         | 0              | 2                      | - | - | 1    | 33 | E         | 3              |
| <b>Package B</b>          |                                  |             |                 |             |                       |   |   |      |    |           |                |                        |   |   |      |    |           |                |
| 16                        | Materials engineering            | XM 2.16.1   | DO              | DD          | 2                     | 1 | 1 | -    | 19 | E         | 3              | -                      | - | - | -    | 0  | -         | 0              |
| 17                        | Mechanisms                       | XM 2.17.2   | DO              | DD          | -                     | - | - | -    | 0  | -         | 0              | 2                      | - | - | 1    | 33 | E         | 3              |
| Total hours (CP) per week |                                  |             |                 |             | 2                     | 1 | 1 | 0    | 19 | 1E+0C     | 3              | 2                      | 0 | 0 | 1    | 33 | 1E+0C     | 3              |
|                           |                                  |             |                 |             | 4                     |   |   | 1.36 |    |           |                | 3                      |   |   | 2.36 |    |           |                |

**OPTIONAL SUBJECTS**

| Nr. crt                   | Course title                                    | Course code | Course category | Course type | Semester I - 14 weeks |   |   |      |     |           |                | Semester II - 14 weeks |   |   |      |    |           |                |
|---------------------------|---|-------------|-----------------|-------------|-----------------------|---|---|------|-----|-----------|----------------|------------------------|---|---|------|----|-----------|----------------|
|                           |   |             |                 |             | C                     | S | L | P    | SI  | Exam form | Credits points | C                      | S | L | P    | SI | Exam form | Credits points |
| 18                        | Transport and handling of dangerous cargo       | XM 2.18.1   | DF              | DS          | 1                     | - | 1 | -    | 22  | C         | 2              | -                      | - | - | -    | 0  | -         | 0              |
| 19                        | Marine environment pollution prevention. MARPOL | XM 2.19.1   | DF              | DS          | 1                     | - | 1 | -    | 22  | C         | 2              | -                      | - | - | -    | 0  | -         | 0              |
| 20                        | Proficiency in survival craft and rescue boats  | XM 2.20.1   | DF              | DS          | 1                     | - | 1 | -    | 22  | C         | 2              | -                      | - | - | -    | 0  | -         | 0              |
| 21                        | Cybersecurity                                   | XM 2.21.1   | DF              | DC          | 2                     | - | 2 | -    | 19  | C         | 3              | -                      | - | - | -    | 0  | -         | 0              |
| 22                        | Modern languages (Maritime English) V, VI       | XM 2.22.1;2 | DI              | DC          | -                     | 2 | - | -    | 47  | C         | 3              | -                      | 2 | - | -    | 47 | C         | 3              |
| 23                        | Onboard training II                             | XM 2.23.2   | DF              | DS          | -                     | - | - | -    | 0   | -         | 0              | 4 weeks x56 hours/week |   |   |      |    | C         | 2              |
| 24                        | Volunteering III, IV                            | XM 2.24.1;2 | DF              | DC          | 14 weeks x1 hour/week |   |   |      |     | C(A/R)    | 2              | 14 weeks x1 hour/week  |   |   |      |    | C(A/R)    | 2              |
| Total hours (CP) per week |   |             |                 |             | 5                     | 2 | 5 | 0    | 132 | 0E+6C     | 14             | 0                      | 2 | 0 | 0    | 47 | 0E+3C     | 7              |
|                           |   |             |                 |             | 12                    |   |   | 9.43 |     |           |                | 2                      |   |   | 3.36 |    |           |                |

DIRECTOR OF ST  
Assoc Prof. Ph. D. Ad

Year III

din planul de învățământ începând cu anul universitar 2022-2023

COMPULSORY SUBJECTS

| Nr. crt                   | Course title  | Course code | Course category | Course type | Semester I - 14 weeks |   |   |   |        |           |                | Semester II - 14 weeks |   |   |   |       |           |                |
|---------------------------|---|-------------|-----------------|-------------|-----------------------|---|---|---|--------|-----------|----------------|------------------------|---|---|---|-------|-----------|----------------|
|                           |   |             |                 |             | C                     | S | L | P | SI     | Exam form | Credits points | C                      | S | L | P | SI    | Exam form | Credits points |
| 1                         | Theory and construction of ships                            | XM 3.1.1    | DI              | DD          | 2                     | - | - | 1 | 58     | C         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 2                         | Thermodynamics II   | XM 3.2.1    | DI              | DD          | 3                     | - | 1 | - | 69     | E         | 5              | -                      | - | - | - | 0     | -         | 0              |
| 3                         | Machine Elements Design II                                  | XM 3.3.1    | DI              | DD          | 3                     | - | - | 1 | 44     | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 4                         | Applied electronics and automation                          | XM 3.4.1    | DI              | DD          | 2                     | - | 1 | - | 58     | C         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 5                         | Fluid mechanics   | XM 3.5.1    | DI              | DD          | 3                     | 1 | 1 | - | 55     | E         | 5              | -                      | - | - | - | 0     | -         | 0              |
| 6                         | Theory of systems and automatic adjustments                 | XM 3.6.1    | DI              | DD          | 2                     | - | 1 | - | 58     | E         | 4              | -                      | - | - | - | 0     | -         | 0              |
| 7                         | Internal Combustion engines processes and characteristics I | XM 3.7.2    | DI              | DS          | -                     | - | - | - | 0      | -         | 0              | 3                      | - | 1 | 1 | 30    | E         | 4              |
| 8                         | Mechanical onboard systems I                                | XM 3.8.2    | DI              | DD          | -                     | - | - | - | 0      | -         | 0              | 3                      | - | 1 | - | 19    | E         | 3              |
| 9                         | Mechanical onboard systems I -pr                            | XM 3.9.2    | DI              | DD          | -                     | - | - | - | 0      | -         | 0              | -                      | - | - | 1 | 36    | C         | 2              |
| 10                        | Marine hydraulic machines                                   | XM 3.10.2   | DI              | DS          | -                     | - | - | - | 0      | -         | 0              | 3                      | - | 1 | 1 | 30    | E         | 4              |
| 11                        | International maritime law                                  | XM 3.11.2   | DI              | DS          | -                     | - | - | - | 0      | -         | 0              | 1                      | 1 | - | - | 47    | C         | 3              |
| 12                        | Environmental protection                                    | XM 3.12.2   | DI              | DC          | -                     | - | - | - | 0      | -         | 0              | 1                      | 1 | - | - | 47    | C         | 3              |
| 13                        | Electrical measurements and transducers                     | XM 3.13.2   | DI              | DD          | -                     | - | - | - | 0      | -         | 0              | 2                      | - | 1 | - | 33    | E         | 3              |
| 14                        | Ethics and academic integrity                               | XM 3.14.2   | DI              | DC          | -                     | - | - | - | 0      | -         | 0              | -                      | 1 | - | - | 36    | C         | 2              |
| 15                        | Practical training III                                      | XM 3.15.2   | DI              | DS          | -                     | - | - | - | 0      | -         | 0              | 3 weeks x30 hours/week |   |   |   |       | C         | 3              |
| Total hours (CP) per week |   |             |                 |             | 15                    | 1 | 4 | 2 | 342    | 4E+2C     | 26             | 13                     | 3 | 4 | 3 | 278   | 4E+5C     | 27             |
|                           |   |             |                 |             | 22                    |   |   |   | 24.429 |           |                | 23                     |   |   |   | 19.86 |           |                |

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

DF - fundamental disciplines DD - Domain Disciplines DS - specialty disciplines DC - complementary disciplines

DI - obligatory disciplines DO - elective disciplines DF- optional disciplines

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in SABĂU

**ELECTIVE SUBJECTS**

| Nr. crt                   | Course title                   | Course code | Course category | Course type | Semester I - 14 weeks |   |   |      |    |           |                | Semester II - 14 weeks |   |   |   |    |           |                |
|---------------------------|--------------------------------|-------------|-----------------|-------------|-----------------------|---|---|------|----|-----------|----------------|------------------------|---|---|---|----|-----------|----------------|
|                           |                                |             |                 |             | C                     | S | L | P    | SI | Exam form | Credits points | C                      | S | L | P | SI | Exam form | Credits points |
| <b>Package A</b>          |                                |             |                 |             |                       |   |   |      |    |           |                |                        |   |   |   |    |           |                |
| 16                        | Electrical action systems      | XM 3.16.1   | DO              | DD          | 2                     | - | 1 | 1    | 44 | E         | 4              | -                      | - | - | - | 0  | -         | 0              |
| 17                        | Naval electrical equipment     | XM 3.17.2   | DO              | DS          | -                     | - | - | -    | 0  | -         | 0              | 2                      | - | 1 | - | 33 | C         | 3              |
| <b>Package B</b>          |                                |             |                 |             |                       |   |   |      |    |           |                |                        |   |   |   |    |           |                |
| 16                        | Machines and electrical drives | XM 3.16.1   | DO              | DD          | 2                     | - | 1 | 1    | 44 | E         | 4              | -                      | - | - | - | 0  | -         | 0              |
| 17                        | Naval electrical devices       | XM 3.17.2   | DO              | DS          | -                     | - | - | -    | 0  | -         | 0              | 2                      | - | 1 | - | 33 | C         | 3              |
| Total hours (CP) per week |                                |             |                 |             | 2                     | 0 | 1 | 1    | 44 | 1E+0C     | 4              | 2                      | 0 | 1 | 0 | 33 | 0E+1C     | 3              |
|                           |                                |             |                 |             | 4                     |   |   | 3.14 | 3  |           |                | 2.3571                 |   |   |   |    |           |                |

**OPTIONAL SUBJECTS**

| Nr. crt                   | Denumirea disciplinei    | Cod disciplină | Categ. disc | Tip disc | Semestrul I - 14 săptămâni |   |   |        |    |        | Semestrul II - 14 săptămâni |                        |   |   |   |    |        |    |
|---------------------------|--------------------------|----------------|-------------|----------|----------------------------|---|---|--------|----|--------|-----------------------------|------------------------|---|---|---|----|--------|----|
|                           |                          |                |             |          | C                          | S | L | P      | SI | FV     | PC                          | C                      | S | L | P | SI | FV     | PC |
| 18                        | Maritime english III, IV | XM 3.18.1;2    | DF          | DC       | -                          | 2 | - | -      | 47 | C      | 3                           | -                      | 2 | - | - | 47 | C      | 3  |
| 19                        | Onboard training         | XM 3.19.2      | DF          | DS       | -                          | - | - | -      | 0  | -      | 0                           | 4 weeks x56 hours/week |   |   |   | C  | 2      |    |
| 20                        | Volunteering V, VI       | XM 3.20.1,2    | DF          | DC       | 14 weeks x1 hour/week      |   |   |        |    | C(A/R) | 2                           | 14 weeks x1 hour/week  |   |   |   |    | C(A/R) | 2  |
| Total hours (CP) per week |                          |                |             |          | 0                          | 2 | 0 | 0      | 47 | 0E+2C  | 5                           | 0                      | 2 | 0 | 0 | 47 | 0E+3C  | 7  |
|                           |                          |                |             |          | 2                          |   |   | 3.3571 | 2  |        |                             | 3.36                   |   |   |   |    |        |    |

DIR... ES  
Assoc... n SABĂU

Year IV

din planul de învățământ începând cu anul universitar 2021-2022

COMPULSORY SUBJECTS

| Nr. crt                   | Course title                                    | Course code | Course category | Course type | Semester I - 14 weeks |   |   |        |     |           |                | Semester II - 14 weeks |   |   |   |     |           |                |
|---------------------------|---|-------------|-----------------|-------------|-----------------------|---|---|--------|-----|-----------|----------------|------------------------|---|---|---|-----|-----------|----------------|
|                           |   |             |                 |             | C                     | S | L | P      | SI  | Exam form | Credits points | C                      | S | L | P | SI  | Exam form | Credits points |
| 1                         | Naval electrical installations                  | XM 4.1.1    | DI              | DS          | 2                     | 0 | 1 | 0      | 33  | E         | 3              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 2                         | Control of naval propulsion systems             | XM 4.2.1    | DI              | DS          | 2                     | 0 | 1 | 0      | 58  | E         | 4              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 3                         | Leadership and teamwork                         | XM 4.3.1    | DI              | DS          | 1                     | 0 | 2 | 0      | 58  | C         | 4              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 4                         | High voltage                                    | XM 4.4.2    | DI              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 1                      | 0 | 1 | 0 | 47  | C         | 3              |
| 5                         | Maintenance and repair of naval vessels in site | XM 4.5.2    | DI              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 1                      | 1 | 0 | 0 | 47  | C         | 3              |
| 6                         | Mechanical onboard systems II                   | XM 4.6.2    | DI              | DD          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 2                      | 0 | 1 | 1 | 19  | E         | 3              |
| 7                         | Preparation of Bachelor of Science license      | XM 4.7.2    | DI              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 3 weeks x30 hours/week |   |   |   |     | C         | 4              |
| 8                         | License exam                                    | XM 4.8.2    | DI              | DS          |                       |   |   |        |     |           |                |                        |   |   |   |     | 10        |                |
| Total hours (CP) per week |   |             |                 |             | 5                     | 0 | 4 | 0      | 149 | 2E+1C     | 11             | 4                      | 1 | 2 | 1 | 113 | 1E+3C     | 13             |
|                           |   |             |                 |             | 9                     |   |   | 10.643 | 8   |           |                | 8.0714                 |   |   |   |     |           |                |

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

DF - fundamental disciplines DD - Domain Disciplines DS - specialty disciplines DC - complementary disciplines

DI - obligatory disciplines DO - elective disciplines DF- optional disciplines

DEAN  
Assoc Pro

DIRECTOR OF STUDIES  
Assoc Prof. Ph. D. Adr



**ELECTIVE SUBJECTS**

| Nr. crt                   | Course title  | Course code | Course category | Course type | Semester I - 14 weeks |   |   |        |     |           |                | Semester II - 14 weeks |   |   |   |     |           |                |
|---------------------------|---|-------------|-----------------|-------------|-----------------------|---|---|--------|-----|-----------|----------------|------------------------|---|---|---|-----|-----------|----------------|
|                           |   |             |                 |             | C                     | S | L | P      | SI  | Exam form | Credits points | C                      | S | L | P | SI  | Exam form | Credits points |
| <b>Package A</b>          |   |             |                 |             |                       |   |   |        |     |           |                |                        |   |   |   |     |           |                |
| 9                         | Propulsion power plants   | XM 4.9.1    | DO              | DS          | 3                     | 0 | 1 | 0      | 69  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 10                        | Naval installations   | XM 4.10.1   | DO              | DS          | 2                     | 0 | 1 | 0      | 58  | C         | 4              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 11                        | Waterways and naval transport relations                             | XM 4.11.1   | DO              | DS          | 4                     | 0 | 1 | 1      | 41  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 12                        | Estimated and costal navigation I                                   | XM 4.12.1   | DO              | DS          | 4                     | 0 | 1 | 1      | 41  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 13                        | Propulsion power plants   | XM 4.13.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 4                      | 0 | 1 | 0 | 30  | E         | 4              |
| 14                        | Propulsion power plants - pr  | XM 4.14.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 0                      | 0 | 0 | 1 | 36  | C         | 2              |
| 15                        | Estimated and costal navigation II                                  | XM 4.15.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 3                      | 0 | 1 | 1 | 30  | E         | 4              |
| 16                        | Ship's commercial exploitation                                      | XM 4.16.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 4                      | 0 | 2 | 0 | 16  | C         | 4              |
| 17                        | Maritime transport theory and techniques                            | XM 4.17.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 2                      | 0 | 0 | 1 | 33  | E         | 3              |
| <b>Package B</b>          |   |             |                 |             |                       |   |   |        |     |           |                |                        |   |   |   |     |           |                |
| 9                         | Internal Combustion engines processes and characteristics II        | XM 4.9.1    | DO              | DS          | 3                     | 0 | 1 | 0      | 69  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 10                        | Marine refrigerating plants   | XM 4.10.1   | DO              | DS          | 2                     | 0 | 1 | 0      | 58  | C         | 4              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 11                        | Internal combustion engines dynamics and components                 | XM 4.11.1   | DO              | DS          | 4                     | 0 | 1 | 1      | 41  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 12                        | Steam generators, steam and gas turbines I                          | XM 4.12.1   | DO              | DS          | 4                     | 0 | 1 | 1      | 41  | E         | 5              | 0                      | 0 | 0 | 0 | 0   | -         | 0              |
| 13                        | Ancillary systems of internal combustion engines                    | XM 4.13.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 4                      | 0 | 1 | 0 | 30  | E         | 4              |
| 14                        | Ancillary systems of internal combustion engines -pr                | XM 4.14.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 0                      | 0 | 0 | 1 | 36  | C         | 2              |
| 15                        | Steam generators, steam and gas turbines II                         | XM 4.15.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 3                      | 0 | 1 | 1 | 30  | E         | 4              |
| 16                        | Exploitation, repair and maintenance of internal combustion engines | XM 4.16.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 4                      | 0 | 2 | 0 | 16  | C         | 4              |
| 17                        | Noise and vibrations on board                                       | XM 4.17.2   | DO              | DS          | 0                     | 0 | 0 | 0      | 0   | -         | 0              | 2                      | 0 | 0 | 1 | 33  | E         | 3              |
| Total hours (CP) per week |   |             |                 |             | 13                    | 0 | 4 | 2      | 209 | 3E+ 1C    | 19             | 13                     | 0 | 4 | 3 | 145 | 3E+ 2C    | 17             |
|                           |   |             |                 |             | 19                    |   |   | 14.929 | 20  |           |                | 10.357                 |   |   |   |     |           |                |

**OPTIONAL SUBJECTS**

| Nr. crt                   | Course title               | Course code | Course category | Course type | Semester I - 14 weeks |   |   |        |    |           |                | Semester II - 14 weeks  |   |   |   |    |           |                |
|---------------------------|----------------------------|-------------|-----------------|-------------|-----------------------|---|---|--------|----|-----------|----------------|-------------------------|---|---|---|----|-----------|----------------|
|                           |                            |             |                 |             | C                     | S | L | P      | SI | Exam form | Credits points | C                       | S | L | P | SI | Exam form | Credits points |
| 18                        | Management and marketing   | XM 4.18.2   | DF              | DC          | 0                     | 0 | 0 | 0      | 0  | -         | 0              | 2                       | 1 | 0 | 0 | 8  | C         | 2              |
| 19                        | Maritime english VII, VIII | XM 4.19.1;2 | DF              | DC          | 0                     | 2 | 0 | 0      | 22 | C         | 2              | 0                       | 2 | 0 | 0 | 22 | C         | 2              |
| 20                        | Cybersecurity              | XM 4.20.1   | DF              | DC          | 2                     | 0 | 2 | 0      | 19 | C         | 3              | 0                       | 0 | 0 | 0 | 0  | -         | 0              |
| 21                        | Onboard training           | XM 4.21.2   | DF              | DS          | 0                     | 0 | 0 | 0      | 0  | -         | 0              | 12 weeks x56 hours/week |   |   |   |    | C         | 2              |
| 22                        | Volunteering VII, VIII     | XM 4.22.1.2 | DF              | DC          | 14 weeks x1 hour/week |   |   |        |    | A/R       | 2              | 14 weeks x1 hour/week   |   |   |   |    | A/R       | 2              |
| Total hours (CP) per week |                            |             |                 |             | 2                     | 2 | 2 | 0      | 41 | 3C        | 7              | 2                       | 3 | 0 | 0 | 30 | 4C        | 8              |
|                           |                            |             |                 |             | 6                     |   |   | 2.9286 | 5  |           |                | 2.1429                  |   |   |   |    |           |                |

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Ass [REDACTED] Ass [REDACTED] SABĂU