**MARITME FACULTY**

**Maritime Transportation Engineering Department**

**Course Catalogue Form**

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| **Issue Date :** | | **Revision Date: -** | | | | **Revision Number: -** | | | | **Faculty Board Decision Number:** | | |
|  | |  | | | |  | | | |  | | |
| **Course Name**: **COASTAL NAVIGATION** | | | | | | | **Degree:** Bachelor | | | | |
| **Code** | **Year/Semester** | | **Local Credits** | **ECTS Credits** | | | **Course Implementation, Hours/Week** | | | | |
| **Course** | | **Tutorial** | | **Workshop** |
| **MTE 006S** | **1/1 (Fall)** | | **2** | **5** | | | **1** | | - | | **1** |
| **Department** | | | **Maritime Transportation Engineering** | | | | | | | | |
| **Instructors** | | |  | | | | | | | | |
| **Contact Information** | | |  | | | | | | | | |
| **Office Hours** | | |  | | | | | | | | |
| **Web page** | | | <https://www.marplat.eu> | | | | | | | | |
| **Course Type** | | | Elective | | | | **Course Language** | | English | | |
| **Course Prerequisites** | | | At discretion of each partner university | | | | | | | | |
| **Course Category by Content, %** | | | **Basic Sciences** | | **Engineering Science** | | | **Engineering Design** | | **Humanities** | |
| 20 | | 50 | | | - | | 30 | |
| **Course Description** | | | This course forms part of the proposed Modular Framework for vocational and professional qualification based on a degree program in Maritime Transportation Engineering. The Programme gives trainees in-depth expertise of managing a naval vessel as a Deck Officer and ultimately as the captain of the vessel. The emphasis is upon nautical systems and topics and their applications in navigating a ship in coastal navigation. | | | | | | | | |
| **Course Objectives** | | | 1. To introduce trainees to the navigational terms and definitions and terrestrial coordinate system.  2. To introduce trainees to various tools used for navigation, charts and publications and their correction procedures. To introduce trainees to the concept of the range and bearing and calculation of courses and distances at sea.  3. To introduce navigation equipment.  4. To introduce concept of coastal navigation  5. To apply simple passage planning procedures to provide trainees with opportunities to develop basic chart work skills in respect to chart composition, position and position line plot and course drawing. | | | | | | | | |
| **Course Learning Outcomes** | | | Trainees passing the course successfully will acquire knowledge and skills as listed below and will be able to be.   1. Familiarize the Bridge Equipment (Briefing and cubical introduction of the equipment in the cubicles in the introduction phase) 2. Participate in the Bridge Team in different roles 3. Apply to expedite the planned route and evade collision for the safe movement of manoeuvres 4. Understand and apply relative movement at sea (turning circles, stopping distances, etc.) 5. Use charts and electronic navigation equipment | | | | | | | | |
| **Instructional Methods and Techniques** | | | Lecturing and Simulator Studies | | | | | | | | |
| **Tutorial Place** | | | Classroom and Simulator | | | | | | | | |
| **Co-term Condition** | | | **---** | | | | | | | | |
| **Textbook** | | | Unit Handout, Power Point Slides  Bowditch, N. The American Practical Navigator. Defence Mapping Agency | | | | | | | | |
| **Other References** | | | 1. STCW Table A-II/1 Competence: 1.1. Plan and conduct a passage and determine position 2. Bridge Procedures Guide 3. COLREG 4. IALA Buoyage, System | | | | | | | | |
| **Homework & Projects** | | | Each group will prepare simple passage planning which will be used during the simulator exercise as directed by the lecturer. | | | | | | | | |
| **Laboratory Work** | | | Simulator Exercise and chartwork | | | | | | | | |
| **Computer Use** | | | Bridge and ARPA Radar simulator Programs and PowerPoint for lecturing | | | | | | | | |
| **Other Activities** | | | 5 video tutorials shall be recorded in the simulator/lab from the selected practical training activities, Group Discussions | | | | | | | | |

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| **Assessment Criteria** | **Activities** | **Quantity** | **Effects on Grading, %** |
| Attendance |  |  |
| Midterm | **1** | **30** |
| Quiz | **2** | **10** |
| Homework | **2** | **10** |
| Term Paper/Project |  |  |
| Laboratory Work |  |  |
| Practices |  |  |
| Tutorial |  |  |
| Seminar |  |  |
| Presentation |  |  |
| Field Study |  |  |
| Final Exam | **1** | **50** |
| **TOTAL** |  | **100** |
| Effects of Midterm on Grading, % |  | **50** |
| Effects of Final on Grading, % |  | **50** |
| **TOTAL** |  | **100** |

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| **ECTS/**  **WORKLOAD TABLE** | **Activities** | **Count** | **Hours** | **Total**  **Workload** |
| Lecture | **7** | **2** | **14** |
| Midterm | **1** | **10** | **10** |
| Quiz | **2** | **5** | **10** |
| Homework | **2** | **10** | **20** |
| Term Paper/Project |  |  |  |
| Laboratory Work |  |  |  |
| Practices | **7** | **5** | **35** |
| Tutorial | **7** | **2** | **14** |
| Seminar |  |  |  |
| Presentation | **7** | **2** | **14** |
| Field Study |  |  |  |
| Final Exam | **1** | **10** | **10** |
| **Total Workload** |  |  | **127** |
| **Total Workload/25** |  |  | **127/25** |
| **Course ECTS Credits** |  |  | **5** |

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| **Week** | **TOPICS** | **Course Outcomes** |
| **1** | **INTRODUCTION**  Introduction of the course, Introduction to Navigation, Familiarization with Simulators | I |
| **2** | **NAVIGATIONAL TERMS AND DEFINITIONS AND TERRESTRIAL COORDINATE SYSTEM**  - Earth’s poles, equator and meridians  - Latitude, parallel of Latitude, prime meridian, longitude,  - Difference of Latitude and Longitude (dlat-dlong), Practice on dlat and dlong problems | II |
| **3** | **NAVIGATIONAL TERMS AND DEFINITIONS AND TERRESTRIAL COORDINATE SYSTEM**  - International nautical mile  - True course, Rhumb line and departure  - The relationship between departure and Dlong  - Summary of terms and definitions | II |
| **4** | **TOOLS USED FOR NAVIGATION, CHARTS AND PUBLICATIONS**  - Tools for navigation  - Nautical Charts  - Chart projections - Charts  - Practical study on charts | III |
| **5** | **TOOLS USED FOR NAVIGATION, CHARTS AND PUBLICATIONS**  - Chart types  **-** Chart datum review  **-** Drawing a Mercator Chart |  |
| **6** | **NAVIGATION EQUIPMENT**  - Magnetic compass and gyro compass  - Sounder, Log  - Radar, ECDIS,  - Autopilot | III |
| **7** | **PREPARATIONS FOR SIMULATOR PRACTICES**  - Familiarization  - Basics of BRM procedures | IV |
| **8** | **SIMULATOR PRACTICES**  Based on eye and chart-ARPA Radar/ECDIS coordination | IV |
| **9** | **COASTAL NAVIGATION PRACTICES**  Position lines and position circles  - Range and bearing  - Calculation of courses and distances  - Chart work  - Use of ARPA Radar | IV |
| **10** | **COASTAL NAVIGATION PRACTICES**  Calculation and application of DR and EP  - Calculation and application of course to steer and distance between ports and waypoints,  - ECDIS practice | V |
| **11** | **SIMPLE PASSAGE PLANNING**  -Elements of Voyage Planning and Passage Planning  - Development of basic chart work skills in respect to chart composition, working neatly and accurately, position and position line plot and course drawing | V |
| **12** | **SIMPLE PASSAGE PLANNING**   * Calculation of ETAs * Simple passage planning * Chart work | V |
| **13** | **PASSAGE PLANNING**   * Application of Simple Passage Planning in the chart room | V |
| **14** | **PASSAGE PLANNING**  - Application of Passage Planning in the FMBS  - Application of basic BRM principles | IV-V |

**Relationship between the Course and the Curricula of Maritime Transportation Engineering**

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|  | **Program Outcomes** | **Level of Contribution** | | |
| **1** | **2** | **3** |
| **a** | An ability to apply knowledge of mathematics, science, and engineering |  |  |  |
| **b** | An ability to design and conduct experiments, as well as to analyse and interpret data |  | X |  |
| **c** | An ability to design a system, component or process to meet desired needs |  | X |  |
| **d** | Ability to function on multi-disciplinary teams |  |  | X |
| **e** | An ability to identify, formulate, and solve engineering problems |  |  |  |
| **f** | An understanding of professional and ethical responsibility |  | X |  |
| **g** | An ability to communicate effectively | X |  |  |
| **h** | The broad education necessary to understand the impact of engineering solutions in a global and societal context |  |  |  |
| **i** | A recognition of the need for, and an ability to engage in life-long learning |  |  | X |
| **j** | A knowledge of contemporary issues |  |  | X |
| **k** | An ability to use the techniques, skills and modern engineering tools necessary for engineering practice |  | X |  |
| **l** | An ability to apply legal, societal and environmental knowledge in maritime transport and in all respective modes of transport operations. |  |  |  |
| **m** | An ability to interpret and analysis of the data regarding maritime management and operations, recognition and solution of problems for decision making process. | X |  |  |

**1: Small, 2: Partial, 3: Full**

**Programme Outcomes & Course Outcomes Connectivity Matrix**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  **Outcomes** | **I** | **II** | **III** | **IV** | **V** |  |  |
| **Programme Outcomes** |
| **a** |  |  |  |  |  |  |  |
| **b** |  |  |  |  |  |  |  |
| **c** |  |  |  |  |  |  |  |
| **d** |  |  |  |  |  |  |  |
| **e** |  |  |  |  |  |  |  |
| **f** |  |  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  |  |  |
| **g** |  |  | |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |  |
| **h** |  |  |  |  |  |  |  |
| **i** |  |  |  |  |  |  |  |
| **j** |  |  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  |  |  |
| **k** |  |  | |  |  | | --- | --- | |  |  | |  |  |  |  |
| **l** |  |  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  |  |  |
| **m** |  |  |  |  |  |  |  |

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| ***Prepared by*** | **Date** | Signature |