University of Gdańsk

Subject card

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| Subject name and code | Navigation - course ECDIS, PG_00131500 | | | | | | |
| Field of study | Marine Hydrography | | | | | | |
| Date of commencement of studies | October 2024 | | Academic year of realisation of subject | | 2025/2026 | | |
| Education level | Bachelor's studies | | Subject group | | Optional subject group<br>Subject group related to practical vocational preparation | | |
| Mode of study | full-time studies | | Mode of delivery | | at the university | | |
| Year of study | 2 | | Language of instruction | | Polish | | |
| Semester of study | 4 | | ECTS credits | | 1.0 | | |
| Learning profile | practical | | Assessment form | | credit | | |
| Conducting unit | | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Krzysztof Naus | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 10 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 10 | | 5.0 | | 10.0 | 25 |
| Subject objectives | Gaining knowledge and skills in using ECDIS for safe navigation, including voyage planning with consideration of potential navigational hazards, available sources of navigational and weather warnings. | | | | | | |

| Learning outcomes | | | |
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| | Course outcome | Subject outcome | Method of verification |
| | [HML3-W09] issues related to route planning, safe route determination and monitoring in accordance with international regulations, including sources of information on navigational hazards and ways of obtaining it | Knows:<br>- Issues related to voyage planning, determining a safe route, and monitoring it in accordance with international regulations, including sources of information on navigational hazards and methods for obtaining it. | [SW4] test/exam - oral or written |
| | [HML3-W06] principles of operation and use of navigation devices and systems and issues related to the determination of the position of the object using all available methods | Knows:<br>- The principles of operation and use of the ECDIS system. | [SW4] test/exam - oral or written |
| | [HML3-W05] map construction and its symbolism | Knows:<br>- The principles of operation and use of the ECDIS system. | [SW4] test/exam - oral or written |
| | [HML3-U07] effectively use information and communication techniques, including utility programs to solve professional problems | Is capable of:<br>- Effectively using information and communication technologies, including application programs, to solve professional problems. | [SU4] test/exam - oral or written |
| | [HML3-U13] determine the technical condition of navigation and hydrotechnical infrastructure, as well as maintain navigation and hydrographic equipment and systems, both on board and on shore | Is capable of:<br>- Assessing the technical condition of navigational and hydro-technical infrastructure, as well as maintaining navigational and hydrographic devices and systems, both onboard and shore-based. | [SU4] test/exam - oral or written |
| | [HML3-U16] prepare in Polish and foreign language a study of a problem in the field of study with documented conclusions, supported by a report and a multimedia presentation | Is capable of:<br>- Preparing a report on a problem related to the field of study in both Polish and a foreign language, including documented conclusions, supported by a written report and a multimedia presentation. | [SU4] test/exam - oral or written |
| | [HML3-U19] plan and implement independent learning and improvement of his/her professional competences | Is capable of:<br>- Planning and carrying out self-directed learning and improving professional competencies. | [SU4] test/exam - oral or written |
| | [HML3-W16] engineering standards and norms specific to the field of study, in particular those recommended by IHO and IMO | Knows:<br>- Standards and norms for ECDIS systems recommended by IHO and IMO. | [SW4] test/exam - oral or written |
| | [HML3-U15] communicate using a variety of techniques, including non-verbal and different technical means in the professional environment and in other environments | Is capable of:<br>- Communicating using various techniques, including non-verbal methods and different technical means, in professional and other environments. | [SU4] test/exam - oral or written |
| | [HML3-U12] use engineering standards and norms and apply technologies specific to the field of study | Is capable of:<br>- Utilizing engineering standards and norms, and applying technologies relevant to the field of study. | [SU4] test/exam - oral or written |
| | [HML3-U11] use navigation devices, means of technical observation and communication as well as measuring instruments, as well as apply in practice various techniques of measurement and observation in the field of professional activity related to the field of study | Is capable of:<br>- Using navigational devices, technical observation and communication means, and measuring instruments, as well as practically applying various measurement and observation techniques in professional activities related to the field of study. | [SU4] test/exam - oral or written |

| Subject contents | |
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| | Geographic Information Systems (GIS). Legal aspects and standardization of ECDIS systems. Characteristics of the basic types of electronic chart systems (ECDIS, RCDS, and ECS). Database creation for ECDIS needs (WEND, RECC centers). Basic navigational functions of ECDIS. Presentation of ECDIS data (ENC/SENC and RNC/SRNC). Devices and sensors compatible with ECDIS. Planning, monitoring, and recording voyages in ECDIS systems. Display and presentation functions of additional navigational information. Data updating, recording navigational data, checking the correct operation of ECDIS, backup functions. ARCS, AVCS, TADS services. Alarms, warnings, and misinterpretation of presented data. Pilot navigation using ECDIS. |

<table>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Colloquium</td><td>51.0%</td><td>100.0%</td></tr>
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</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. BOWDITCH N.: American Practical Navigator. 2002. (Chapter 14 Electronic Charts).</td></tr>
<tr><td>Supplementary literature</td><td>1. Navi-Sailor 4100 User Manual.<br>2. NMEA Interface Standard 0183 v.3.01 (Severna Park, MD, National Marine Electronic Association, 1/2002).<br>3. SOLAS Convention, Regulations V/19, V/20 and V/27 as amended 2009, IMO Res. MSC 282(86).</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. What is GIS and what are its main functions in navigation?<br>2. What are the basic legal regulations governing the operation of ECDIS?<br>3. Explain the differences between ECDIS, RCDS, and ECS systems.<br>4. What is the WEND database and what is its significance for ECDIS?<br>5. What are the key navigational functions available in the ECDIS system?<br>6. What monitoring and recording functions does ECDIS offer for voyages?<br>7. What are the procedures for updating data in ECDIS?<br>8. What are the most common causes of misinterpretation of data presented by ECDIS?<br>9. What are the advantages of using ECDIS in pilot navigation?</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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