University of Gdańsk

# Subject card

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|---|---|---|---|
| Subject name and code | Navigation - ECDIS course - lecture, PG_00198840 | | |
| Field of study | Marine Hydrography | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | 2027/2028 |
| Education level | Bachelor's studies | Subject group | Obligatory subject group in the field of study<br>Optional subject group |
| 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 | 10.0 | 0.0 | 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 | 1.0 | 14.0 | 25 |

**Subject objectives**

Gaining knowledge and skills in using ECDIS for safe navigation, including voyage planning with consideration of potential navigational hazards, and available sources of navigational and weather warnings.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [HML3-W06] knows and understands, at an advanced level, 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 the principles of operation and use of the ECDIS system | [SW4] test/exam - oral or written |
| [HML3-W09] knows and understands, at an advanced level, 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 the 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 them | [SW4] test/exam - oral or written |
| [HML3-W16] knows and understands engineering standards and norms specific to the field of study, in particular those recommended by IHO and IMO | knows the standards and norms for ECDIS systems recommended by IHO and IMO | [SW4] test/exam - oral or written |
| [HML3-W05] knows and understands, at an advanced level, map construction and its symbolism | knows the structure of an electronic map and its symbols | [SW4] test/exam - oral or written |

<table>
<tr><td>Subject contents</td><td colspan="3">Geographic information systems GIS. Legal aspects, standardization of ECDIS systems. Characteristics of basic types of electronic chart systems (ECDIS, RCDS, and ECS). Database created for ECDIS needs (WEND, RECC centers). Basic navigational functions of ECDIS. Presentation of ECDIS data (ENC/SENC and RNC/SRNC). Devices and sensors cooperating with ECDIS. Planning, monitoring, and recording voyages in ECDIS systems. Display and presentation functions of additional navigational information. Data updating, registration of navigational data, control of the correct functioning of ECDIS, backup functions. ARCS, AVCS, TADS services. Alarms, warnings, and misinterpretation of presented data. Pilot navigation using ECDIS.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><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></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">1. BOWDITCH N.: American Practical Navigator. 2002. (Chapter 14 Electronic Charts).</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">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 colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">1. Discuss the most important applications of GIS in hydrography.<br>2. Which international organizations are responsible for the standardization of ECDIS?<br>3. What functions do RECC centers serve in the context of ECDIS?<br>4. How does ECDIS help ensure safe navigation?<br>5. What are ENC and SENC data?<br>6. What data do these devices provide and how are they used in ECDIS?<br>7. How does ECDIS record navigational data and what methods are used to ensure the system's correct operation.<br>8. What types of alarms and warnings are generated by ECDIS?</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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