



Subject card

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| Subject name and code | , PG_00058656 | | | | | | | |
| Field of study | Transport and Logistics | | | | | | | |
| Date of commencement of studies | February 2023 | Academic year of realisation of subject | | | 2023/2024 | | | |
| Education level | second-cycle studies | Subject group | | | | | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | | |
| Year of study | 1 | Language of instruction | | | Polish Teaching in English is feasible on demand. Some lecture notes are in Polish only. | | | |
| Semester of study | 2 | ECTS credits | | | 4.0 | | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | | |
| Conducting unit | Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology | | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Jakub Montewka | | | | | | |
| | Teachers | | | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM | |
| | Number of study hours | 30.0 | 0.0 | 0.0 | 30.0 | 0.0 | 60 | |
| | E-learning hours included: 0.0 | | | | | | | |
| | Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16588 | | | | | | | |
| 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 | 60 | | 0.0 | | 0.0 | | 60 |
| Subject objectives | The objective of the course is to familiarize the student with the basic issues related to the design, operation, and modernization of waterways, including the classification of waterways, their infrastructure, the hydrotechnical structures that make up an inland waterway, as well as the navigation and teleinformation infrastructure of the waterway. The ship types and the physical basis of their movement are described. Finally, development trends of inland and maritime routes in the framework of the EU policy of the trans-European transport network TEN -T are presented. | | | | | | | |

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| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [K7_U06] The student is able to notice their non-technical aspects, including environmental, economic and legal aspects when formulating and solving project tasks. Applies the principles of occupational health and safety | The student is able to determine the boundary conditions of the analyzed problem, being aware of the existence of a wide range of influence of systems in many aspects. | [SU3] Assessment of ability to use knowledge gained from the subject |
| | [K7_W02] The student has an extensive knowledge of modeling transport processes, including the knowledge necessary to describe and evaluate the functioning of selected elements of the transport system | The student is able to perform a simple task related to modeling a selected process occurring in transport systems. | [SW3] Assessment of knowledge contained in written work and projects |
| | [K7_K02] The student is aware of the importance of non-technical aspects and the effects of engineering activities, including its impact on the natural environment and the related responsibility for decisions made | The student is aware of the multi-aspect nature of transport systems. | [SK5] Assessment of ability to solve problems that arise in practice |
| | [K7_U04] The student is able to use the known methods and mathematical models, as well as computer simulations to analyze, design and evaluate the functioning of transport systems or their components | The student skillfully selects tools to suit the needs, correctly interprets the obtained results and skillfully indicates the limitations related to the modeling process. | [SU4] Assessment of ability to use methods and tools |
| [K7_U01] The student can obtain information from literature, databases and other, properly selected sources, also in English; is able to integrate the obtained information, interpret it, as well as draw conclusions and formulate and justify opinions | The student skillfully conducts literature research on the issue he is analyzing and draws valid conclusions. | [SU5] Assessment of ability to present the results of task | |
| Subject contents | <ol style="list-style-type: none"> 1. Classification of inland waterways, line and point infrastructure of these roads; 2. Basic hydrotechnical structures forming an inland waterway. 3. Basics of planning of waterways in classical manner and using risk based methods. 4. Current methods for determining the safe width, depth and capacity of waterways. 5. Methods of assessing the safety of navigation on waterways. 6. Types of ships and physical principles related to buoyancy, stability, and resistance of marine and inland vessels. 7. Elements of navigation and tele- IT infrastructure that ensure safe operation of waterways. 8. Development trends of inland and maritime waterways in the context of the TEN -T policy of the trans-European transport network. | | |
| Prerequisites and co-requisites | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Final test completed | 51.0% | 50.0% |
| | Assignments completed | 51.0% | 50.0% |
| Recommended reading | Basic literature | <ol style="list-style-type: none"> 1. Jan Kulczyk Jan Winter, Śródlądowy transport wodny, Wrocław 2003 2. Stanisław Gućma (redakcja), Morskie drogi wodne. Projektowanie i eksploatacja w ujęciu inżynierii ruchu. Gdańsk, 2015 3. PIANC, Harbour approach channels design guidelines. PIANC report No 121. Brussels, 2014 4. Fisheries and Oceans Canada, Safe waterways, Part 1(a), Guidelines for the safe design of commercial shipping channels. 5. US Army Corps of Engineers, Hydraulic design of deep-draft navigation projects. Washington 2006 | |
| | Supplementary literature | <ol style="list-style-type: none"> 1. Ryszard Rolbiecki, Krystyna Wojewódzka-Król, Aleksandra Gus-Puszczewicz, Transport wodny śródlądowy w zrównoważonym rozwoju. Wyd. Uniwersytetu Gdańskiego 2020. 2. Rozporządzenie Ministra Infrastruktury z dnia 28 kwietnia 2003 r. w sprawie przepisów żeglugowych na śródlądowych drogach wodnych 3. Ustawa z dnia 20 lipca 2017 r. - Prawo wodne 4. USTAWA z dnia 21 grudnia 2000 r. o żegludze śródlądowej 5. https://www.nik.gov.pl/aktualnosci/rozwoj-srodladowych-drog-wodnych.html 6. The overseas coastal area development institute of Japan, Technical standards and commentaries for port and harbour facilities in Japan. Tokyo 2009. | |

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| | eResources addresses | Adresy na platformie eNauzanie: |
| Example issues/ example questions/ tasks being completed | | |
| Work placement | Not applicable | |