



## Subject card

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| Subject name and code                       | Infrastructure and Exploitation of Ports and Logistics Terminals, PG_00055081                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                         |                                     |                                                                                              |            |     |
| Field of study                              | Transport and Logistics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                          |                                         |                                     |                                                                                              |            |     |
| Date of commencement of studies             | October 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                          | Academic year of realisation of subject |                                     | 2024/2025                                                                                    |            |     |
| Education level                             | first-cycle studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                          | Subject group                           |                                     | Optional subject group<br>Subject group related to scientific research in the field of study |            |     |
| Mode of study                               | Full-time studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | Mode of delivery                        |                                     | at the university                                                                            |            |     |
| Year of study                               | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | Language of instruction                 |                                     | Polish                                                                                       |            |     |
| Semester of study                           | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | ECTS credits                            |                                     | 4.0                                                                                          |            |     |
| Learning profile                            | general academic profile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                          | Assessment form                         |                                     | assessment                                                                                   |            |     |
| Conducting unit                             | Department of Theory and Ship Design -> 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                                 | 0.0                                                                                          | 15.0       | 45  |
|                                             | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 45                                                       |                                         | 10.0                                |                                                                                              | 45.0       | 100 |
| Subject objectives                          | The aim of the course is to familiarize the student with the sea and inland ports subject, i.e. the most important aspects related to the infrastructure, suprastructure and operation of sea and inland ports in Poland and in the world. The student learns about functioning of modern, large sea and inland ports, their construction and the most important port services they provide. This course also aims at showing the economic and organizational conditions of operating ports and to presenting the requirements that modern, large ports in Poland and in the world face. |                                                          |                                         |                                     |                                                                                              |            |     |

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| Learning outcomes                                              | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Subject outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Method of verification                                                                                                                                                   |
|                                                                | [K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of means and systems of transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Student creates, describes and presents a selected engineering problem of transport system. He characterizes the functioning of seaports, infrastructure and suprastructure. Student knows the role of ports in multimodal transport system.                                                                                                                                                                                                                                                                    | [SU5] Assessment of ability to present the results of task<br>[SU2] Assessment of ability to analyse information<br>[SU1] Assessment of task fulfilment                  |
|                                                                | [K6_W05] has an organized knowledge on design, construction and operation of means and systems of transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Student describes the basic structure and role of sea ports in the transport system of the country and the world. He can describe the port operations and characterize the most important port services. He knows the organization of work and traffic in the port, characterizes the management of transport processes in the port, knows the role of institutions and offices in the seaports. Student describes the transshipment technologies in Polish seaports and knows the equipment of port terminals. | [SW2] Assessment of knowledge contained in presentation<br>[SW3] Assessment of knowledge contained in written work and projects<br>[SW1] Assessment of factual knowledge |
|                                                                | [K6_W08] has knowledge regarding the principles of sustainable development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Student has knowledge of the requirements for modern seaports and inland ports and their role in the supply chain. He is able to characterize the principles of environmental protection in seaport, list port networks and characterize their operation. Student knows the most important aspects of the sustainable development of seaports.                                                                                                                                                                  | [SW3] Assessment of knowledge contained in written work and projects<br>[SW1] Assessment of factual knowledge                                                            |
| Subject contents                                               | Construction and equipment of sea and inland ports. Division of sea and inland ports by destination and function. Characteristics of the functioning of modern seaports, seaports in Poland, Europe and the world, competitiveness of seaports. Conditions that must be met by a seaport to be able to function freely, basic requirements for modern seaports. The concept and classification of seaports, the importance of port infrastructure, port infrastructure management. Port infrastructure, the process of loading cargo onto the ship. Port suprastructure. Port networks. Functions of seaports, quality of port services, production features of port services. Transshipment technologies in Polish seaports, terminal equipment in seaports. Size of the seaport measures, port generations. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                          |
| Prerequisites and co-requisites                                | Lectures knowledge: Sea-going ships, Means of transport, Transport infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                          |
| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Percentage of the final grade                                                                                                                                            |
|                                                                | Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 50.0%                                                                                                                                                                    |
|                                                                | Seminar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 50.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 50.0%                                                                                                                                                                    |
| Recommended reading                                            | Basic literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Robert J. McCalla, Brian Slack, Peter Hall, <i>Integrating Seaports and Trade Corridors</i> , 2016 Routledge                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                          |
|                                                                | Supplementary literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Kap Hwan Kim (Editor), Hans-Otto Günther, <i>Container Terminals and Cargo Systems: Design, Operations Management, and Logistics Control Issues</i> , Springer 2007                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |
|                                                                | eResources addresses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Adresy na platformie eNauczanie:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |
| Example issues/<br>example questions/<br>tasks being completed | Transshipment technologies in sea ports<br>Characteristics of Ro-Ro handling technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                          |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                          |