



## Subject card

|                                             |                                                                                                                                                                                                                 |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | , PG_00065284                                                                                                                                                                                                   |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
| Field of study                              | Organizacja i zarządzanie transportem kolejowym                                                                                                                                                                 |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
| Date of commencement of studies             | February 2025                                                                                                                                                                                                   |                                                          | Academic year of realisation of subject                                                                                                                               |                                     | 2025/2026                                                                                                                              |            |     |
| 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                                                                                                                                 |            |     |
| Semester of study                           | 2                                                                                                                                                                                                               |                                                          | ECTS credits                                                                                                                                                          |                                     | 2.0                                                                                                                                    |            |     |
| Learning profile                            | general academic profile                                                                                                                                                                                        |                                                          | Assessment form                                                                                                                                                       |                                     | assessment                                                                                                                             |            |     |
| Conducting unit                             | Faculty of Civil and Environmental Engineering -> Wydziały Politechniki Gdańskiej                                                                                                                               |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                              |                                                          | dr inż. Sławomir Grulkowski                                                                                                                                           |                                     |                                                                                                                                        |            |     |
|                                             | Teachers                                                                                                                                                                                                        |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                     | Lecture                                                  | Tutorial                                                                                                                                                              | Laboratory                          | Project                                                                                                                                | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                           | 15.0                                                     | 15.0                                                                                                                                                                  | 0.0                                 | 0.0                                                                                                                                    | 0.0        | 30  |
|                                             | 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                                                                                                                                                                                           | 30                                                       |                                                                                                                                                                       | 0.0                                 |                                                                                                                                        | 0.0        | 30  |
| Subject objectives                          | Obtaining basic information on the technique and organization of railway transport.                                                                                                                             |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
|                                             | Transmission of the message on vertical management in rail traffic                                                                                                                                              |                                                          |                                                                                                                                                                       |                                     |                                                                                                                                        |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                  |                                                          | Subject outcome                                                                                                                                                       |                                     | Method of verification                                                                                                                 |            |     |
|                                             | [K7_W01] identifies in an in-depth way phenomena related to the field of study as well as theories describing them and possible methods of analyzing processes occurring in the life cycle of technical systems |                                                          | The student is able to determine the capacity of a station and a railway line. He is able to create a timetable.                                                      |                                     | [SW1] Ocena wiedzy faktograficznej                                                                                                     |            |     |
|                                             | [K7_U02] presents logical and solid arguments regarding the obtained results, through analysis, synthesis of information in various technical contexts, critically approaching their interpretation             |                                                          | It can analyze data from transport systems in order to integrate them                                                                                                 |                                     | [SU4] Ocena umiejętności korzystania z metod i narzędzi<br>[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu |            |     |
|                                             | [K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values                                                                        |                                                          | Is able to choose the preferred transport system in a given situation. Is able to calculate the capacity of the means of transport                                    |                                     | [SK3] Ocena umiejętności organizacji pracy<br>[SK2] Ocena postępów pracy                                                               |            |     |
|                                             | [K7_U05] cooperates with other people in the implementation of team work, both as a leader and a team member, effectively achieving set goals                                                                   |                                                          | Is able to identify and define the role of transport in a given location and economic situation. Is able to establish a hierarchy of means of transport with the team |                                     | [SU4] Ocena umiejętności korzystania z metod i narzędzi<br>[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu |            |     |
|                                             | [K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems                                                                                       |                                                          | Identifies rolling stock and personnel needs. Determines the use of transport potential using scientific methods                                                      |                                     | [SK1] Ocena umiejętności pracy w grupie<br>[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce                   |            |     |

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|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Subject contents                                               | LECTURE                                                                                            |                                                                                                                             |                               |
|                                                                | Rules and procedures for running train traffic on the railway network.                             |                                                                                                                             |                               |
|                                                                | Timetable preparation procedure                                                                    |                                                                                                                             |                               |
|                                                                | Technology of passenger transport                                                                  |                                                                                                                             |                               |
|                                                                | Technology of rail freight Interoperability                                                        |                                                                                                                             |                               |
|                                                                | Capacity of lines and railway stations.                                                            |                                                                                                                             |                               |
|                                                                | TUTORIALS                                                                                          |                                                                                                                             |                               |
|                                                                | Cyclical timetable                                                                                 |                                                                                                                             |                               |
|                                                                | Circulation and rotation of the composition                                                        |                                                                                                                             |                               |
|                                                                | Calculation of bandwidth                                                                           |                                                                                                                             |                               |
| Prerequisites and co-requisites                                | Basic information on the subjects Railway Traffic Engineering and Rail Transport Infrastructure    |                                                                                                                             |                               |
| Assessment methods and criteria                                | Subject passing criteria                                                                           | Passing threshold                                                                                                           | Percentage of the final grade |
|                                                                | Test                                                                                               | 60.0%                                                                                                                       | 50.0%                         |
|                                                                | Tutorials                                                                                          | 60.0%                                                                                                                       | 50.0%                         |
|                                                                |                                                                                                    |                                                                                                                             |                               |
| Recommended reading                                            | Basic literature                                                                                   | Jacyna M., Gołębiowski P., Krześniak M., Szkopiński J., Organizacja ruchu kolejowego, Warszawa, 2019.                       |                               |
|                                                                |                                                                                                    | Żurkowski A., Pawlik M., Ruch i przewozy kolejowe. Sterowanie ruchem, Warszawa, 2010.                                       |                               |
|                                                                |                                                                                                    | Żurkowski A., Ewolucja i nowoczesne zasady budowy wykresu ruchu pociągów pasażerskich, Logistyka, 3, 2014.                  |                               |
|                                                                |                                                                                                    | Nowosielski L., Organizacja przewozów kolejowych, KOW, Warszawa, 1999                                                       |                               |
|                                                                | Supplementary literature                                                                           | Urbanyi-Popiołek I., Ekonomiczne i organizacyjne aspekty transportu, Wyższa Szkoła Gospodarki w Bydgoszczy, Bydgoszcz, 2013 |                               |
|                                                                | Zalewski P., Siedlecki P., Drewnowski A., Technologia transportu kolejowego, WKŁ, Waeszwawa, 2004. |                                                                                                                             |                               |
|                                                                | eResources addresses                                                                               |                                                                                                                             |                               |
| Example issues/<br>example questions/<br>tasks being completed | What is train and shunting?                                                                        |                                                                                                                             |                               |
|                                                                | Cyclical, integrated timetable                                                                     |                                                                                                                             |                               |
|                                                                | Calculation of transport needs                                                                     |                                                                                                                             |                               |
| Practical activities within the subject                        | Not applicable                                                                                     |                                                                                                                             |                               |

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