



Subject card

| | | | | | | | |
|---|---|--|-------------------|-------------------------------------|-------------------------------|------------|-----|
| Subject name and code | Railways I, PG_00044193 | | | | | | |
| Field of study | Civil Engineering | | | | | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | | | 2026/2027 | | |
| Education level | first-cycle studies | Subject group | | | | | |
| 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 | | | 2.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Railway Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Eligiusz Mieloszyk | | | | | |
| | 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 | | 5.0 | | 15.0 | 50 |
| Subject objectives | The aim of the course is to present the structure of railways, the characteristics of the rail surface elements (rails, sleepers and ballast) and the basic rules of railway track designing. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| Subject contents | Course content – lecture Types of transport and place of railway transport;Contact of various types of transport with railway transport;Engineering structures on a railway (bridges, viaducts, tunnels, culverts);Connections of the issues of railway engineering with the following areas of knowledge: geotechnics, structural mechanics, geodesy, materials engineering, environmental engineering, mechanical engineering (vehicle mechanics and rolling stock), aerodynamics (rolling stock), electrical engineering and electronics (traction, rail traffic control);Basic concepts related to railway infrastructure;Classification of railway lines;Railway track surface elements;Railway line as a spatial curve;Principles of shaping the track geometry;Transition curves, including clothoid and its properties;Geometric layout of the track in the horizontal and vertical planes;Vehicle in a circular curve and transition curve;A rail on an elastic foundation loaded with concentrated force, used to measure the stiffness of a railway superstructure. | | | | | | |
| Prerequisites and co-requisites | Not required | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | Percentage of the final grade | | |
| | Passing the exercises | | 60.0% | | 60.0% | | |
| | Passing the lecture (test) | | 60.0% | | 40.0% | | |

| | | |
|--|--------------------------|---|
| Recommended reading | Basic literature | <p>1. Bałuch H.: Układy geometryczne połączeń torów. WKŁ. Warszawa 1989.</p> <p>2. Bałuch M.: Podstawy dróg kolejowych. Politechnika Radomska 2001.</p> <p>3. Koc W.: Elementy teorii projektowania układów torowych. Politechnika Gdańska 2004.</p> <p>4. Sysak J.: Drogi kolejowej. PWN, Warszawa 1986. 5. Rozporządzenie ministra transportu i gospodarki morskiej z dnia 10 września 1998 r. w sprawie warunków technicznych, jakim powinny odpowiadać budowle kolejowe i ich usytuowanie. Dz. U. z dnia 15 grudnia 1998. z późniejszymi zmianami</p> <p>6. Id -1 Warunki techniczne utrzymania nawierzchni na liniach kolejowych Warszawa, 2005.</p> <p>7. Grulkowski S., Kędra Z., Koc W., Nowakowski M.: Drogi szynowe. Wyd. Pol. Gdańskiej, Gdańsk 2013</p> |
| | Supplementary literature | 1. Annex No. 1 to Resolution No. 1086/2017 of the Management Board of PKP Polskie Linie Kolejowe S.A. of November 13, 2017, Technical standards, Attachment ST1-T1-A6 |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | | |
| Practical activities within the subject | Not applicable | |

Document generated electronically. Does not require a seal or signature.