GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Rail transport infrastructure, PG_00044608		
Field of study	Transport		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study 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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
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	dr inż. Sławomir Grulkowski	
	Teachers		

Lesson types

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

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	5.0	35.0	100

Subject objectives

The aim of the course is to acquaint the student with the elements of rail transport infrastructure, which is the provision of railway and tramway. Principles of construction, operation and design of infrastructure

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

Course content – lecture
LECTURE Railway lines and tracks categories and classes. Infrastructure of the railroads. Track structure and turnouts loading, construction, diagnostics and maintenance. Unconventional track structures. Forming of the system and profile of the railroad. High-speed lines. Rail engineering structures. Possibilities of the reduction of vibroacoustic impact of the rail transport on environment. Rail transport infrastructure in the city and agglomeration tram, metro, fast city and regional trains. Classifications of the operation points. Railway stations and junctions. Unconventional trains (cable car, magnetic levitation trains). Railway stations. Terminals of the multimodal transport.

TUTORIALS Determination of the appropriate amounts of the materials used for railway line building. Calculations of the size and capacity of passenger and freight railway stations. Operation of railway station.

PROJECT Project of the arc of the railway line. Project of the part of the tram line

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
totorials	100.0%	25.0%
project	100.0%	35.0%
lecture	60.0%	40.0%

Recommended reading	Basic literature	1. Basiewicz T., Gołaszewski A., Rudziński L.; Infrastruktura transportu. Politechnika Warszawska, 2007 2. Towpik K.; Infrastruktura transportu kolejowego. Politechnika Warszawska, 2004 3. Regulation of Minister of Transport and Maritime Economy of 10 September 1998 on the technical requirements to be met by railway structures and their location. (Dz. U. No 151/1998) 4. Technical Guidelines for the design, construction and maintenance of tram tracks. Ministry of Communications. Warsaw 1983 5. Chełmecki W. Stacje kolejowe cz. 1 i 2. Wyd. Politechniki. Krak. 1997 i 2001 6. Grulkowski S., Kędra Z., Koc W., Nowakowski M., Drogi szynowe, Wyd. Polit. Gda., Gdańsk, 2013
	Supplementary literature	1. Technika Transportu szynowego (magazine) 2. Infrastruktura transportu (magazine)
	eResources addresses	
Example issues/ example questions/ tasks being completed	Elements of a railway elements of subgrade railway turnouts	
Practical activites within the subject	Not applicable	

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