



Subject card

Subject name and code	Railway traffic engineering , PG_00044347						
Field of study	Civil Engineering						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2025/2026		
Education level	second-cycle studies	Subject group			Optional subject group		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Railway Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Jerzy Zariczny				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	0.0	0.0	0.0	10
	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	10		5.0		10.0	25
Subject objectives	The aim of the course is to familiarize the student with principles of railway traffic on the railway network and shunting. The student learn about elements of the railway network, basics of working technology of the railway station and principles of railway signalling and railway traffic control systems. The student is familiar with principles of designing of railway infrastructure taking into account requirements of railway traffic engineering.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W08] has deep knowledge of railway track construction, including high speed railroads; design and renovation of railroads of complex geometry; has detailed knowledge about diagnostics of railroads, knows basics of railway traffic organisation and control		Knowledge of the basics of the organization and control of railway traffic.				
[K7_U09] is able to design railway tracks of complex geometry on sections and stations, both newly designed and renovated; can make a plan and perform diagnostic of railway track and to interpret its results, propose conclusions; can evaluate durability and reliability of railroad elements		Ability to dimension and construct a functional diagram of a railway station.					
Subject contents	The railway network and traffic posts. Railway stations and technical posts. Location and dimensioning of track layouts of railway posts. Selection of railway turnouts. Designing of speed profile for the railway line. Railway signalling. Railway traffic control devices. Operation rules of railway traffic on the route. Operation rules of railway traffic on traffic posts. Operation rules of shunting.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Colloquium of the lectures content - written work, duration approximately 1 hour		50.0%		100.0%		

Recommended reading	Basic literature	<p>1. Rozporządzenie Ministra Infrastruktury z dnia 18 lipca 2005 r. w sprawie ogólnych warunków prowadzenia ruchu kolejowego i sygnalizacji. Dziennik Ustaw 2005 Nr 172 Poz. 1444 (Tekst jednolity wraz z późniejszymi zmianami)</p> <p>2. Instrukcja o prowadzeniu ruchu pociągów Ir 1 (R 1). PKP Polskie Linie Kolejowe S.A.. Warszawa 2008 (Tekst jednolity wraz z późniejszymi zmianami)</p> <p>3. Instrukcja sygnalizacji Ie 1 (E 1). PKP Polskie Linie Kolejowe S.A.. Warszawa 2007 (Tekst jednolity wraz z późniejszymi zmianami)</p> <p>4. Wytyczne techniczne budowy urządzeń sterowania ruchem kolejowym Ie 4 (WTB E10). PKP Polskie Linie Kolejowe S.A.. Warszawa 2014</p> <p>5. Standardy techniczne szczegółowe warunki techniczne dla modernizacji lub budowy linii kolejowych do prędkości V_{max} 200 km/h (dla taboru konwencjonalnego) / 250 km/h (dla taboru z wychylnym pudłem) Tom I Droga szynowa PKP Polskie Linie Kolejowe S.A. i Centrum Naukowo - Techniczne Kolejnictwa. Warszawa 2009</p>
	Supplementary literature	<p>1. Cieślakowski S.: Stacje kolejowe. Wydawnictwa Komunikacji i Łączności. Warszawa 1992</p> <p>2. Dąbrowa - Bajon M.: Podstawy sterowania ruchem kolejowym. Funkcje, wymagania, zarys techniki. Oficyna Wydawnicza Politechniki Warszawskiej. Warszawa 2014</p> <p>3. Dyduch J., Kornaszewski M.: Systemy sterowania ruchem kolejowym. Wydawnictwo Uniwersytetu Technologiczno - Humanistycznego. Radom 2012</p> <p>4. Massel A.: Projektowanie linii i stacji kolejowych. Kolejowa Oficyna Wydawnicza. Warszawa 2010</p> <p>5. Zalewski P., Siedlecki P., Drewnowski A.: Technologia transportu kolejowego. Wydawnictwa Komunikacji i Łączności. Warszawa 2013</p> <p>6. Żurkowski A., Pawlik M.: Ruch i przewozy kolejowe. Sterowanie ruchem. Kolejowa Oficyna Wydawnicza. Warszawa 2010</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Dimensioning and constructing a functional diagram of a node station.	
Work placement	Not applicable	