

Description of course			
Code of course	-		
Name of course	<i>Transportation railway systems</i>		
Version of course	2024/25		
A. Place of the course in system of studies			
Level of education	ERASMUS+		
Form and mode of studies	Full-time studies		
Field of studies	Transport		
Profile of studies	General academic profile		
Specialisation	Optional subject for ERASMUS +		
Place of teaching of course	Faculty of Transport, Division of Traffic Control and Transport Infrastructure		
Place of realization of course	-		
Coordinator of course	<i>Jacek Kukulski, Ph.D., DSc.</i> , Faculty of Transport, Division of Traffic Control and Transport Infrastructure		
B. General characteristic of the course			
Block / Group of courses	Specialization subjects		
Level of course	Intermediate		
Status of course	Faculty with limited choice		
Język prowadzenia zajęć	Język angielski		
Language of course	English		
Nominal semester	-		
Preliminary requirements	not required		
Limit of students	-		
C. Effects of education and manner of teaching			
Purpose of course	<i>To acquaint students with passenger and freight rail transport systems covering a number of passenger rail systems, from conventional and high-speed, to intercity, suburban, regional and urban systems. In addition, the aim is also to familiarize yourself with rail transport systems for the transport of conventional, heavy and hazardous cargo.</i>		
Course's effects			
<i>No effect</i>	<i>Description of the effect</i>	<i>Reference to learning outcomes in the area of education</i>	<i>Reference to the learning outcomes in the program</i>
Assumed learning outcomes in terms of knowledge			
W01	<i>Has theoretical knowledge of the classification of railway transport, tram and metro systems</i>	-	Tr1A_W09
W02	<i>Has theoretical knowledge of the organization of rail freight, transport of heavy rail loads and issues related to environmental protection</i>	-	Tr1A_W09
Assumed learning outcomes in terms of skills			
U01	<i>He can prepare and discuss selected issues concerning the solutions of the transport system in the selected country</i>	-	T1A_U16

	<i>dotyczące rozwiązań systemu transportowego w wybranym kraju</i>				
Assumed learning outcomes in the field of social competences					
KS01	<i>Understands the need for lifelong learning, primarily in order to improve their professional and personal competences.</i>	-			Tr1A_K01
Form of didactic studies and number of hours	Lecture	Exercise type of course	Laboratory	Project type of course	Other
On a weekly plan	2	0	0	0	0
Throughout the semester	20	0	0	0	0
Educational content - separately for each form of didactic classes	<p>The content of the lecture:</p> <ol style="list-style-type: none"> 1. The railway as a transport system 2. Classification of railway systems 3. Tramway 4. Metro 5. Monorail system 6. High-speed trains 7. Freight (goods) rail transport 8. Heavy haul rail transport 9. Railway and environmental protection 10. Power InRail - 3D Rail Design and Analysis Software - presentation 				
Teaching methods	-				
Methods of checking learning outcomes (for each item of learning outcomes, including, for skills, reference to specific project, laboratory tasks, etc.)					
<i>No effect</i>	The way of checking				
Assumed learning outcomes in terms of knowledge					
W01	Preparation and presentation of a presentation on transport system solutions - discussion				
W02	Preparation and presentation of a presentation on transport system solutions - discussion				
Assumed learning outcomes in terms of skills					
U01	Preparation and presentation of a presentation on transport system solutions - discussion				
Assumed learning outcomes in the field of social competences					
KS01	Oral conversation during the passing of the presentation				
Methods of evaluation	Preparation of a presentation on the transport system in the selected country and its delivery.				
Exam	No				
Literature	<p>Literature:</p> <ol style="list-style-type: none"> 1. COMMISSION REGULATION (EU) No 1299/2014 of 18 November 2014, on the technical specifications for interoperability relating to the ‘infrastructure’ subsystem of the rail system in the European Union. 2. COMMISSION REGULATION (EU) No 1300/2014 of 18 November 2014, on the technical specifications for interoperability relating to accessibility of the 				

	<p>Union's rail system for persons with disabilities and persons with reduced mobility.</p> <p>3. COMMISSION REGULATION (EU) No 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the ‘rolling stock — locomotives and passenger rolling stock’ subsystem of the rail system in the European Union.</p> <p>4. Esveld Coenraad „Modern Railway Track “ 2001.</p> <p>5. EN 13803-1:2010: Railway applications – Track alignment design parameters.</p> <p>6. Satish Chandra, M. M. Agarwal „Railway engineering”, 2011 .</p> <p>7. Pyrgidis, Christos N. Railway transportation systems. Boca Raton : CRC Press, 2016.</p> <p>8. Bonnet, Practical railway engineering, 2008.</p>
Website of the course	-
D. Student’s activity	
Number of credits ECTS	5
Number of hours of student’s job for achievement of education’s effect (description):	105 hours, including: work at lectures 20 hours, reading the indicated literature 46 hours, consultations 3 hours, preparation for passing a presentation, 30 hours, preparation of a presentation 5 hours, consultations, participation in the presentation 1 hour.
Number of credits ECTS on the course with direct participation of academic teacher	1.0 ECTS points (24 hours, including: work during lectures 20 hours, consultations 3 hours, participation in the presentation 1 hour)
Number of credits ECTS on practical activities on the course	2.0 ECTS points (79 hours, including: reading the indicated literature 46 hours, 3 hours preparing to pass a presentation, 30 hours, preparing a presentation)
E. Additional information	
Remarks	As long as it does not cause changes in the relationship of a given subject with the directional effects in the content of education, changes may be introduced on an ongoing basis, taking into account the latest scientific achievements.
Date of last edition	2024-10-31