

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Railways		Code 1010621271010620373
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty Railway Transport	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: 1 Laboratory: - Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 1 50% 1 50%
Responsible for subject / lecturer: Wojciech Sawczuk DEng. email: wojciech.sawczuk@put.poznan.pl tel. +48 61 665 2023 Faculty of Working Machines and Transportation Piotrowo 3 street, Poznan		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	The student has a basic knowledge of railway infrastructure. In addition, knows, construction and repair of roads, railway transport. The student knows the basic production technologies and methods of mounting rails.
2	Skills	The student can use the acquired knowledge for the planning process of installation and maintenance of rail tracks. The student can solve specific technical and technological problems arising in the production and repair of railway tracks.
3	Social competencies	Students can work in groups, to organize the process of production and operation, its main features. The student determines the priorities is important in solving the set tasks. Student showing independence in solving technical problems, the acquisition and improvement of acquired knowledge and skills.
Assumptions and objectives of the course: The objective is to introduce the basic parameters of a rail road, rules of design, construction and operation.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. has ordered theoretically knowledge in the field of rail infrastructure points and linear. Know the life cycle of infrastructure elements. - [K1A_W14]		
2. he has knowledge in the field of technical operation, knows, technical and economic aspects of the operation of rail ways, selection of parameters of use, factors performing certain changes to the state and the types of damage. - [K1A_W15]		
Skills:		
1. can get access to information from the literature, Internet, databases and other sources. - [K1A_U01]		
2. knows how to communicate using different methods in a professional environment with formal record of design, technical drawings, concepts and definitions . - [K1A_U02]		
3. able to analyze the facilities and technical solutions, can search in catalogues and on sites of the producers of the ready infrastructure, to assess their suitability for use. - [K1A_U10]		
4. may develop technology for the production of a simple control, and also technologies of mounting and Dismounting of this element of infrastructure. - [K1A_U14]		
Social competencies:		

1. understands the need and knows opportunities for continuous professional development in the field, knows the need to acquire new knowledge for professional development. - [K1A_K01]
2. have a sense of responsibility for their work and the willingness to obey the principles of cooperation in a team and be responsible for jointly fulfilled the task. - [K1A_K04]
3. in the mind transfer of the received knowledge society, is making efforts to this information were clear. - [K1A_K08]

Assessment methods of study outcomes		
A written exam, a Colloquium loans		
Course description		
General characteristics of railway transport, components and spare parts of the highway and its form, the message of railway rolling stock. The base path of the railway, covering rails, pipes, rails, strewing of the road. - Knowledge of development directions of the canvas train because of the speed and load, boats signs. The calculation of the excavation works, the design of railway lines, parameters of the railway. Classification of Railways. General principles for the design of railway tracks and stations. The rules of operation.		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Sysak J.: Podstawy dróg kolejowych. PWN Warszawa 1982. 2. Praca zbiorowa pod redakcją Sysak J.: Drogi kolejowe. WKŁ, Warszawa 1986. 3. Batko M.: Drogi kolejowe. WKŁ, Warszawa 1986. 4. Szajer R.: Drogi kolejowe. WKŁ, Warszawa 1977. 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. Zamięcki H.: Budowa i utrzymanie dróg kolejowych ? tom I. WKŁ, Warszawa 1972. 		
Result of average student's workload		
Activity	Time (working hours)	
1. Preparation for the performance	2	
2. Participation in lectures	15	
3. Fixing the contents of the lectures	2	
4. Consultations in lectures	2	
5. Exam preparation	5	
6. Participation in the exam	2	
7. Preparing for exercises	2	
8. Part in the exercises	15	
9. Fixing the contents of physical exercises	5	
10. Consultations for physical exercises	2	
11. Preparation of set-off	5	
12. Participation in success	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	62	2
Contact hours	38	2
Practical activities	0	0