

Tadeusz Kosciuszko Cracow University of Technology

Course Card

Faculty of Civil Engineering

Field of study: Civil Engineering

Study profile: general academic

Study form: full-time

Field of study code: BUD

Study cycle: 1st

Specialty: no specialty

1 COURSE INFORMATION

Course name	Infrastruktura kolejowa
Course name in English	Railway Infrastructure
Course code	WIL BUD oIS D52 24/25
Course category	Przedmioty profilowe
No. of ECTS points	2.00
Semester	6

2 CLASS TYPE, NUMBER OF HOURS ACCORDING TO THE STUDY PLAN

Semester	Lecture	Class exercise	Laboratory	Computer lab	Design exercise	Seminar
6	15	0	0	0	15	0

3 COURSE OBJECTIVES

Objective 1 Basic information about railway infrastructure and the management system (investments, maintenance, inspection)

Objective 2 Rail track systems, components of the railway track, turnouts, engineering objects.

Objective 3 Stations - basic components and track layouts, platforms, infrastructure including solutions for people with reduced mobility

Objective 4 Railway loads classification, geometrical design of a rail road. Basic information about the subgrade.

4 PREREQUISITES IN TERMS OF KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1 General construction knowledge about structures.

5 LEARNING OUTCOMES

LO1 Knowledge Student knows tracks systems including engineering objects and turnouts, level-crossings, etc.

LO2 Skills Student knows solutions for station infrastructure including those for people with reduced mobility

LO3 Knowledge Student knows regulations for design of track layout and infrastructural elements

LO4 Skills Student is capable of designing a section of a railway line including a simple infrastructural object such as a level-crossing.

6 COURSE CONTENT

Design exercise		
No.	Subject matter of the course Detailed description of thematic blocks	No. of class hours
P1	Design of a railway line section including the design a platform or a level crossing	15

Lecture		
No.	Subject matter of the course Detailed description of thematic blocks	No. of class hours
L1	Basic documents referring to rail transport (Polish and European). Rail transport and other means of transport. Types of rail transport systems (conventional and non-conventional). Brief characteristics of railway network in Europe (lengths, speeds, loads, etc.) 6.High speed railways	3
L2	Types of track structures. Ballasted track and its characteristics. Ballastless track systems.	2
L3	Station track layouts and turnouts, crossings and other track combinations.	2
L4	Detailed description of a turnout and its function in the station	2
L5	Railway line design principles including station design	3
L6	Platform infrastructure design including solutions for persons of reduced mobility	3

7 TEACHING TOOLS

N1 Presentations

N2 In-class design exercises

8 Student workload

Activity form	Number of hours of activity
Hours realized in contact with the teacher	
Hours resulting from the study plan	30
Consultation hours	12
Exams and tests during session	2
Hours of autonomous student work	
Preparing for classes, studying literature	6
Developing results	4
Preparing of reports, projects presentations, discussion	2
Total number of hours devoted to the subject	56
Total number of ECTS points	2.00

9 Methods of grading

Partial grades

F1 Lecture-based test

F2 Individual design project

Summary grade

P1 Average of the two marks
