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	Rysunek techniczny
Course name in English	Technical Drawing
Course code	WIL BUD oIS C18 24/25
Course category	Basic
No. of ECTS points	2.00
Semester	2

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

Semester	Lecture	Class exercise	Laboratory	Computer lab	Design exercise	Seminar
2	0	0	0	0	30	0

3 COURSE OBJECTIVES

Objective 1 Ability to effectively communicate engineering concepts and problem solutions for civil engineering design.

Objective 2 Ability to make (create) as well as to read technical drawings of designed constructions according to related drawing standards and conventions of engineering graphics. In particular, a special attention will be paid both to architectural and building drawings and to construction drawings (technical drawings for reinforced concrete

structures and for structural metal works) presented at various degrees of accuracy. Schematic drawings, assembly drawings, working drawings and detailed drawings will be specified.

4 PREREQUISITES IN TERMS OF KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1 Descriptive Geometry Course

2 Ability to represent a 3D object in European and U.S. Standard (orthographic views).

5 LEARNING OUTCOMES

LO1 Knowledge The graduate will have knowledge of the National and the European Standards required to prepare both construction and structural design projects.

LO2 Skills The graduate will have the ability to prepare design projects according to various degrees of accuracy. In particular, a special attention will be paid both to architectural and building drawings and to branch drawings (constructional and sanitary drawings, technical drawings for structural metal works and for reinforced constructions).

LO3 Knowledge The graduate will have the ability to use the AutoCAD system to create a design project.

LO4 Knowledge The graduate will be able to communicate design ideas with his/her co-workers and to work in a team.

6 COURSE CONTENT

Design exercise		
No.	Subject matter of the course Detailed description of thematic blocks	No. of class hours
P1	Introduction to technical drawing standardization. Classification of drawings: schematic, working, assembly and detailed drawings and relevant scales. Standard sheet sizes (PN ISO 5457). Spaces for drawing and for text, and title blocks on drawing sheets (PN-ISO 9431). Title blocks (PN-ISO 7200). Completing the documentary of drawings (PN-86/N-01603). Scales on technical drawings (PN-EN ISO 5455). Lettering (PN-EN ISO 3098). Standard drawing lines (PN-EN 128). Introduction into AutoCAD tools and menu environment. Formatting of a sheet size, drawing limits, units, title block, line and text style. Assignment 1. Drawing sheet with a large and a small title block (Scale 1:1).	4
P2	Assignment 2. (Scale 1:1): Rolled Profiles. I-beam, C-beam, Angle beam and T-beam (PN-EN ISO 5261). Drawing standards and conventions application. Dimensioning principles (PN ISO 129).	4
P3	Assignment 3. Architectural design project. Ground-floor plan of a detached family house as an exemplary drawing for an architectural design project (Scale 1:100). Simplified and symbolic designations on architectural and building drawings (PN-B 01025). Dimensioning and indications on architectural drawings (PN-ISO 129).	8
P4	Assignment 4. Reinforced Concrete Constructional Drawing. Simplified representation of reinforcing bars (PN-EN ISO 3766), scheduling of reinforcing bars. Bill of materials used in a reinforced construction (Scale 1:20).	6

Design exercise		
No.	Subject matter of the course Detailed description of thematic blocks	No. of class hours
P5	Assignment 5: Metalwork Constructions - Mechanical fastening (rivets and bolts) Schematic (Scale 1:50; 1:100) and detailed (Scale 1:10) drawings for a steel construction. Simplified representation of bars and profile sections, Symbolic representation of rivets and bolts. Dynamic blocks application.	4
P6	Assignment 6: Metalwork Constructions: welded and soldered joints. Welding designations (PN-EN ISO 5461, PN-EN 22553). Steel truss drawing.	4

7 TEACHING TOOLS

N1 Design exercise / projects

N2 Multimedia presentation / presentations

N3 Consultation / consultations

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	5
Exams and tests during session	5
Hours of autonomous student work	
Preparing for classes, studying literature	0
Developing results	0
Preparing of reports, projects presentations, discussion	20
Total number of hours devoted to the subject	**60**
Total number of ECTS points	2.00

9 Methods of grading

Partial grades

F1 Individual project / project

F2 Oral answers

Summary grade

P1 Colloquium / tests

P2 Weighted average of the midterm tests grades / average marks

Conditions for passing the course

L1 delivery of project