



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technical Drawings and CAD in installation systems [N1|Środ2>RTiCAD]

### Course

Field of study	Year/Semester
Environmental Engineering	1/2
Area of study (specialization)	Profile of study
–	general academic
Level of study	Course offered in
first-cycle	Polish
Form of study	Requirements
part-time	compulsory

### Number of hours

Lecture	Laboratory classes	Other (e.g. online)
0	20	0
Tutorials	Projects/seminars	
0	0	

### Number of credit points

2,00

### Coordinators

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### Lecturers

### Prerequisites

Knowledge of the principles of technical drawing. Basic knowledge of CAD software. Ability to work in team. Awareness of the need to continually update and supplement one's knowledge and skills.

### Course objective

Improving students' skills in making design drawings and technical diagrams using modern CAD software, primarily in the field of building utility installations.

### Course-related learning outcomes

Knowledge:

Principles of drawing complex technical installations (plan view, cross-section, details, technical diagrams, P&ID drawings, isometric view, pipeline profile).

Advanced knowledge about working with selected CAD software (including preparing complex layouts for printing).

Skills:

Student can make CAD drawing of complex building utility installation using an existing construction

drawing (plan and cross-section), as a technical diagram, also using isometric view.  
Student can correctly prepare complex printing layout.  
Student can make simple 3D drawing.

Social competences:

Awareness of the need to constantly acquire and expand knowledge in order to competently pursue the career in engineering.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Checking and marking of technical drawings made by the student during the classes.

### Programme content

Practical drawing exercises using CAD software:

- diagrams of central heating system,
- diagrams of plumbing system,
- plan and cross-section of HVAC system,
- diagrams of water supply system (isometric),
- profile drawings of municipal utility pipelines,
- printing layouts,
- simple 3D drawings.

### Course topics

none

### Teaching methods

Multimedia presentation and practical tasks performed by students (drawing using CAD software).

### Bibliography

Basic:

Rysunek techniczny w mechanice i budowie maszyn, Paweł Romanowicz, PWN 2018 (available on IBUK web platform).

Additional:

Polish standards concerning technical drawings.

Manuals and tutorials made available by CAD software providers.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	20	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00