



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Computer-aided Engineering Drawing

### Course

Field of study

Engineering Management

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

10

Laboratory classes

Tutorials

12

Projects/seminars

Other (e.g. online)

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

Ph.D., D.Sc., Eng. Józef Gruszka, University  
Professor

Responsible for the course/lecturer:

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## Prerequisites

Basic knowledge of high school in geometry and drawing.

## Course objective

Introduction of the most important information from the field of technical drawing including Polish standards.

Familiarization with electrical, architectural and construction drawings and machine construction based on the information from the machine drawing. The ability to read technical drawing.

## Course-related learning outcomes

### Knowledge

Knows the methods and tools for data collection, processing and selection and distribution of information [P6S\_WG\_08]

Has basic knowledge of the nature of management sciences and their place, and relationships with contextual and ergological sciences [P6S\_WK\_11]

Knows the basic methods, techniques, tools and materials used to solve simple engineering tasks in the field of machine construction and operation [P6S\_WK\_16]

### Skills

Can plan and carry out experiments, including computer measurements and simulations, interpret obtained results and draw conclusions [P6S\_UW\_09]

Is able to use analytical, simulation and experimental methods to formulate and solve engineering tasks [P6S\_UW\_10]

Is able to identify design tasks and solve simple design tasks in the field of machine construction and operation [P6S\_UW\_14]

Can apply typical methods for solving simple problems in the field of machine construction and operation [P6S\_UW\_15]

### Social competences

Is able to prepare and implement business ventures [P6S\_KO\_03]

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative evaluation:

- a) Laboratory: based on the assessment of the current exercise progress of the technical drawing
- b) Lecture: based on the answers to questions concerning the material from previous lectures



Summary evaluation:

- a) Laboratory: credit in the form of technical drawings from the implemented contents of the program
- b) Lecture: credit in the form of a selection test

### Programme content

The program of subject includes the following topics: types of drawings, sheet formats, standardized technical drawing elements, types and distribution of sections, views and intersections, dimensioning, tolerance of dimensions, shape and position, determination of surface roughness and waviness, connection of machine parts, axles, arbour, bearings, clutches and brakes. Drawing and reading of schemes: mechanical, hydraulic, pneumatic, thermal energy and vacuum technology, electrical drawing elements, chemical and architectural - construction. Drawings: Executives, assemblies, graphs and nomograms.

### Teaching methods

Educational methods:

- a) Lecture: Monographic lecture using a computer with the division of program content into separate thematic issues in relation to the thematic scope of the exercises.
- b) Laboratory: exercise method with elements of demonstration method and causerie method according to the program content.

### Bibliography

Basic

Józef Gruszka, Kamil Wróbel, Adam Radecki (2021), Zarządzanie doбором narzędzi inżynierskiej grafiki komputerowej w projektowaniu ergonomicznym, Monografia (w opracowaniu), Wydawnictwo Politechniki Poznańskiej.

Piotr Agaciński (2014), Grafika inżynierska, Politechnika Poznańska. Wydawnictwo Politechniki Poznańskiej, Poznań 2014

Tadeusz Dobrzański (2019), Rysunek techniczny maszynowy, Wydawnictwo Naukowe PWN.

Andrzej Kania (2016), Geometria wykreślna z grafiką inżynierską. Cz. 2, Rzuty Monge'a, Wydawnictwo Politechniki Śląskiej.

Filipowicz K., Kowal A., Kuczaj M., Rysunek techniczny, Wydawnictwo Politechniki Śląskiej, Gliwice 2016.

Zakres aktualnych aktów normatywnych z zakresu rysunku technicznego.



Additional

Molasy R., Rysunek techniczny : chropowatość i falistość powierzchni, tolerancje geometryczne i tolerowanie wymiarów, Wydawnictwo Politechniki Świętokrzyskiej, Kielce, 2016.

Andrzej Kania (2016), Geometria wykreślna z grafiką inżynierską. Cz. 1, Rzut cechowany, Wydawnictwo Politechniki Śląskiej.

Tomasz Geisler, Wojciech Sochacki (2017), Grafika inżynierska, Wydawnictwo Politechniki Częstochowskiej.

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	25	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) <sup>1</sup>	75	3,0

<sup>1</sup> delete or add other activities as appropriate