



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Basics of engineering graphics

### Course

Field of study

Management and Production Engineering

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

Tutorials

30

Projects/seminars

Other (e.g. online)

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

Dr Eng. Stanisław Pabiszczak

Responsible for the course/lecturer:

Faculty of Mechanical Engineering

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### Prerequisites

Student has a fundamental knowledge in the field of mathematics (geometry) and technology and the ability to use drawing tools.

### Course objective

Developing spatial imagination abilities and familiarizing students with the principles of mapping of spatial objects in the plane. Developing students' ability to create technical documentation of objects and machine structures; developing an ability to read and interpret engineering drawings.



### Course-related learning outcomes

#### Knowledge

Student has ordered knowledge of the principles of technical drawing.

Understands the importance of drawing standards in engineering graphics.

#### Skills

Student can map the spatial object in a plane.

Student can draw and dimension the basic elements of engineering structures.

Student has an ability to prepare and read engineering documentation.

Student can use standards.

Student has an ability of learning unaided.

#### Social competences

Student is able to work independently on the assigned task.

Understands the need of lifelong learning.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: a test consisting of 10 single-choice test tasks and 2 drawing tasks.

Tutorials: 3 tests concerning: European orthogonal projections, cross-sections and dimensioning; preparation of a portfolio containing a set of drawings made during the classes. Final mark based on the arithmetic mean of the marks obtained (4 marks)

### Programme content

Types of technical drawings, drawing sheets, drawing lines, technical characters, drawing plates, drawing scale, orthogonal projection, axonometric projection (isometric, dimetric), drawing views and cross-sections, types of cross-sections, auxiliary and partial views, revolved sections, interrupted views, cross-sections of symmetrical parts, developing a drawing sheet, general rules for dimensioning, dimensioning of workpieces, dimension chains, parallel, chain and combined dimensioning, datums in technical drawing, roughness, tolerance and fit in drawing, drawing permanent and temporary joints, drawing shafts and their parts, production and assembly drawings, mechanical diagrams.

### Teaching methods

Lecture: multimedia presentation illustrated by examples/tasks given on a blackboard

Tutorials: examples given on a blackboard, drawing exercises, self-solved tasks, discussion.

### Bibliography



Basic

- T. Dobrzański, Rysunek Techniczny Maszynowy, WNT, Warszawa 2021
- J. Bajkowski, J.M Bajkowski, Podstawy Zapisu Konstrukcji, PWN, Warszawa 2019

Additional

- A. Bober, M. Dudziak, Zapis konstrukcji, Wyd. Politechniki Poznańskiej, Poznań 1996

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	55	2,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	45	1,5

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