



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Engineering graphics [S1IBio1>GI]

Course

Field of study

Biomedical Engineering

Year/Semester

1/1

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

15

Number of credit points

3,00

Coordinators

Lecturers

dr inż. Rafał Mostowski

rafal.mostowski@put.poznan.pl

Prerequisites

KNOWLEDGE: the student has basic knowledge of elementary geometry. **SKILLS:** the student has the ability to obtain information and to select the correct sources of information. **SOCIAL COMPETENCES:** the student understands the need for self-education, is able to interact in a group and define tasks and priorities for their implementation.

Course objective

Passing on the knowledge of the fundamentals of engineering graphics covered by the program content, acquisition of skills of shaping and developing spatial imagination, practical creation of technical drawing documentation.

Course-related learning outcomes

Knowledge:

Students have the knowledge to record the construction in engineering graphics in accordance with the rules (standards).

Skills:

Students have the ability to self-learn, among other things to improve his/her professional competence. Students can reproduce and dimension machine elements and apply other elements of drawing documentation.

Social competences:

Students understand the need for lifelong learning; can inspire and organise the learning of others.

Students can interact and work in a group, assuming different roles.

Students can identify priorities for achieving a specific task or tasks.

Students can correctly identify and resolve professional dilemmas.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Written examination of lecture consists of two stages and four parts. First stage, which includes parts one and two, takes place mid semester, whereas second stage, consisting of parts three and four, takes place at the end of the semester. Each part is graded using point scale, the number of points sufficient to pass equals 50% of total score.

Continuous monitoring and grading of exercises using point scale. To pass the tutorial part of the course it is required to acquire at least 50% of total score awarded for exercises.

Continuous control and final grading of the project using point scale. To pass the projects part of the course it is required to acquire at least 50% of total score that is possible to achieve.

Programme content

Introduction: graphical communication technique, standardized elements of the construction record. (1) Recording of geometric form of machine elements: rectangular projection, views, cross-sections, layouts. (2) Recording of the dimensional system: graphical form, rules of arrangement, dimensioning of geometrical elements of the object, general dimensioning rules, dimensioning rules resulting from construction, measurement and technological needs. (3) Simplifications in recording the construction: drawing of threads, splines and threaded, spline, welded, soldered, glued connections, drawing of springs, gears, seals and bearings. (4) Recording of surface condition: tolerances, fits, tolerance of shape and position, roughness, heat treatment and coating marks. (5) Analysis and correct interpretation of assembly drawings. (6) Development directions of creating technical documentation based on direct writing of necessary information in 3D model (Model-Based Definition).

Teaching methods

1. Lecture with multimedia presentation.
2. Exercises - practical presentation of sample tasks supported by a multimedia presentation, drawing tasks.
3. Projects - individually performed assembly drawings.

Bibliography

Basic

1. Dobrzański T., Rysunek techniczny maszynowy, WNT, W-wa 2020.

2. Lewandowski T., Rysunek techniczny dla mechaników, WSiP, W-wa 2018.

Additional

1. Bober A, Dudziak M., Zapis konstrukcji, PWN, W-wa 1999, 2001.

2. Rydzanicz I., Rysunek techniczny jako zapis konstrukcji Zadania, WNT, Warszawa, 2004.

Breakdown of average student's workload

| | Hours | ECTS |
|---|-------|------|
| Total workload | 75 | 3,00 |
| Classes requiring direct contact with the teacher | 45 | 2,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 30 | 1,00 |