

ENGINEERING GRAPHICS – CAD I

REGULATIONS

1. Objectives

Engineering Graphics - CAD classes are given as tutorials.

They contain:

- advanced problems of descriptive geometry
- rules and basics of engineering drawing
- using CAD-2D and/or CAD-3D systems (Drafting Module) for creating technical documentation

The main objective of tutorials is to develop creating and comprehending of technical drawings.

Students learn how to create technical documentation using traditional (handwrite plotting) and modern (AutoCAD and/or Solid Edge or NX systems) methods.

2. Schedule

Schedule contains:

- a) engineering graphics exercises
- b) technical drawing of machine elements based on assembly drawings and real objects (with pencil)
- c) isometric and oblique projection drawing (homework)
- d) technical drawing of machine elements using CAD-2D and/or CAD-3D system

3. Attendance

- a) It is the student's responsibility to participate in all tutorials and to arrive on time. Any absence from classes may be justified only with a medical documentation. A document confirming the existence of such a reason should be provided by the student to the lecturer. Maximum two unexcused absences are allowed. The third unjustified absence results in failing the subject.
- b) Unexcused absence from the tests is equivalent to failing them. In this case, the student may retake them at **the date specified by the tutor.**

4. Preparation to Tutorials

Student duties:

- a) attendance in tutorials; punctuality
- b) preparation of the following personal drawing accessories:
 - black pencils of middle hardness (HB, F or similar)
 - red pencil
 - compass
 - two large set squares (30° and 45°)
 - pencil eraser
 - white paper sheets (A3 and A4 format)
- c) thorough understanding and systematic repetition of material from previous tutorials;
- d) **meeting deadlines set for drawings made during tutorials and as homework**
- e) preparation and submission of a **new version** of a drawing (if required) **together with a previous version of the drawing corrected by the lecturer. Changes of deadlines are exceptional and need to be approved by the lecturer;**
- f) **The decision about passing will be taken at last class of the term. For that class all students should bring a briefcase with the complete set of tasks. The folder should be provided with a complete table which is available on the ZPK website;**
- g) **Taking pictures with a mobile phones is only allowed after the clear consent of the lecturer and only to the extent permitted by them. It is prohibited to share any of these photos, especially online.**

5. Bibliography

1. **Polish Norms** in terms of technical drawing
2. Cecil Jensen, Jay D.Helsel, Dennis R.Short - **Engineering Drawing & Design.**
3. Tadeusz Dobrzański - **Rysunek Techniczny Maszynowy,**
4. Bajkowski Jerzy - **Podstawy zapisu konstrukcji**
5. Burcan Jan - **Podstawy rysunku technicznego**
6. Robert Molasy - **Grafika Inżynierska. Zasady rzutowania i wymiarowania.**

6. Tutorials

During classes students are expected to prepare technical drawings of machine parts and assembly drawings based on **individual topics** (part of machine, element of the construction or assembly drawing). Drawings prepared in accordance with the requirements (with use of pencil, A3 size of sheets) and **with the applicable standards (including appropriate borders and filled title block)** should be handed in before the set deadline date. The progress of the drawing can be consulted with the tutors. **Deadlines for the subject completion and drawings' submission cannot be changed.** Delay in submitting the drawing may result in a lower final grade. The drawing, corrected by the tutor, is returned to a student within one week. **If the pass mark is not obtained for a submitted drawing, it has to be redrawn and returned before the date specified by the tutor (together with the previous version).**

As part of their studies, students are required to create axonometric drawings given as homework and to complete the drawings made during the classes.

During classes in the Computer Lab students are expected to prepare (with additional support if required) technical drawings in CAD-2D and/or CAD-3D system – individual and group projects. **Students are required to strictly comply with the Lab Regulations – especially configuration settings regulations established in the Computer Lab.**

7. Subject completion

The course can be completed by obtaining:

- a) positive marks in all tests
- b) positive marks in all drawings

There are two 2-hour tests that are intended to check student's knowledge. For these, a student is expected to create a technical drawing of a construction element of similar difficulty as parts of machines drawn during the classes.

It is allowed to retake each of the tests maximum three times, however after two retake tests the student cannot receive any grade higher than 3. **It is obligatory to hand in all submissions (for which a student obtained a pass mark) to the tutor beforehand. During the tests it is forbidden to use cell phones and other devices recording and / or reproducing image and sound.**

It is impossible to obtain credit from the course if at least one requirement is not fulfilled.

Final grade is dependent on :

- **tests marks**
- **quality of student drawings**
- **activity during classes**

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