



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technical drawing

Course

Field of study

Aerospace engineering

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

9

Laboratory classes

0

Other (e.g. online)

0

Tutorials

9

Projects/seminars

9

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

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Faculty of Mechanical Engineering

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Responsible for the course/lecturer:

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3, 60-965 Poznań

Prerequisites

Knowledge: Basic knowledge of elementary geometry and stereometry. Basic knowledge of machine science and machine parts.

Skills: The ability to solve problems based on the acquired knowledge and the ability to obtain information from indicated sources

Social competences: Understanding the need to expand one's competences, readiness to cooperate as part of a team



Course objective

Mastering the basic rules of constructing images of spatial creations on a plane. Shaping spatial imagination.

Getting to know the methods and principles of recording the structure. Practical ability to create drawing documentation. Ability to "read" drawings.

Course-related learning outcomes

Knowledge

1. Has an ordered, theoretically founded knowledge in the field of engineering graphics and machine construction: technical drawing, object projection, basic principles of engineering graphics, the use of computer graphic CAD programs (Computer Aided Design) in machine construction [P7S_WG, K2A_W05]
2. Has basic knowledge of the main departments of technical mechanics: statics, kinematics and dynamics of a material point and a rigid body, and strength of materials, including the basics of the theory of elasticity and plasticity, stress hypotheses, methods of calculating beams, membranes, shafts, joints and other simple construction elements [K2A_W32]

Skills

1. is able to communicate with the use of various techniques in the professional environment and other environments, using the formal notation of the structure, technical drawing, concepts and definitions of the scope of the field of study [P7S_UK, K2A_U02]
2. can draw a diagram and a simple machine element in accordance with the rules of technical drawing [K2A_U23]

Social competences

1. understands the need for lifelong learning; can inspire and organize the learning process of other people [P7S_UU, K2A_K01]
2. Is ready to critically evaluate the knowledge and content received, recognize the importance of knowledge in solving cognitive and practical problems and consult experts in the event of difficulties with solving the problem on its own [P7S_KK, K2A_K02]
3. is aware of the social role of a technical university graduate, and especially understands the need to formulate and convey to the society, in particular through the mass media, information and opinions on the achievements of technology and other aspects of engineering activities; makes efforts to provide such information and opinions in a commonly understandable manner [P7S_KO, K2A_K08]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam of the lecture, completion of exercises, completion of project classes

Programme content



1. Introductory information, standardization in the construction record.
2. Methods of mapping three-dimensional objects on the drawing plane.
3. Presentation of the internal structure of the object by means of sections, types of sections.
4. Presentation of the cross-section of an object by means of lays.
5. The use of geometric constructions for drawing utility objects.
6. Interference lines of intersecting typical solids.
7. Record of dimensions.
8. Tolerances on production drawings and fits on assembly drawings.
9. Geometric structure of the GSP surface.
10. Working drawings of parts of the shaft and sleeve class. Splines.
11. Detailed drawings of the wheel class parts; gears.
12. Assembly drawings of threaded and splined connections.
13. Simplifications in drawing rolling bearings.
14. Rules for drawing welds and welded joints.
15. Designing a bearing arrangement.
16. Analysis (reading) of assembly drawings

Teaching methods

Informative (conventional) lecture (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character

The exercise method (subject exercises, practice exercises) - in the form of auditorium exercises (application of acquired knowledge in practice - may take various forms: solving cognitive tasks or training psychomotor skills; transforming a conscious activity into a habit through repetition)

Project method (individual or team implementation of a large, multi-stage cognitive or practical task, the effect of which is the creation of a work)

Bibliography

Basic

1. Dobrzański T., Machine technical drawing, WNT, W-wa 1997.
2. Lewandowski T., Technical drawing for mechanics, WSiP, Warsaw 2009.



3. Figurski J., Popis St., Professional technical drawing in the mechanical and automotive industry, WSiP, Warsaw 2016.
4. Bober A., Dudziak M., Record of construction, PWN, Warsaw 1999.
5. Bajkowski J., Fundamentals of construction recording, Oficyna Wydawnicza Politechniki Warszawskiej, Warsaw 2014.
6. Jankowski W. Descriptive Geometry. P.P. publisher 1999
7. Korczak J., Prętki Cz. Sections and developments of cylindrical and conical surfaces. P.P. publisher 1999
8. Loska J., Collection of exercises on technical drawing, Wyd. Silesian University of Technology, Gliwice 1982

Additional

1. Freuch T.E., Vierck C.I., Fundamentals of engineering drawing, McGraw-Hill Book Co., New York 1960.
2. Freuch T.E., Vierck C.I., Engineering drawing and graphic technology, McGraw-Hill Book Co., New York 1972

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	70	3,0

¹ delete or add other activities as appropriate