COURSE DESCRIPTION CARD - SYLLABUS

Course name

Engineering drawing

Course

Field of study

Aviation

Year/Semester

Area of study (specialization)

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

Projects/seminars

15

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

dr inż. Maciej Berdychowski

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tel. 61 224 4512

Wydział Inżynierii Mechanicznej

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

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tel. 61 6475992

Instytut Konstrukcji Maszyn

ul. Piotrowo 3, 60-965 Poznań

Prerequisites

Fundamental knowledge on geometry and stereometry.

Fundamental knowledge on theory of machines and machine parts.

Course objective

Mastership of basic principles of image construction of spatial objects on the plane. Training of spatial imagination.

Learning the methods and principles of engineering drawing. Practical skills of preparing the technical documentation. Skills of "reading" the engineering drawing.

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 CAD (Computer Aided Design) graphic programs in the construction of machines

Skills

1. is able to communicate using various techniques in the professional environment and other environments using the formal notation of construction, technical drawing, concepts and definitions of the scope of study

Social competences

1. understands that in technology, knowledge and skills very quickly become obsolete

2. is aware of the social role of a technical university graduate, in particular understands the need to formulate and provide the society, in an appropriate form, with information and opinions on engineering activities, technological achievements, as well as the achievements and traditions of the engineer profession

3. correctly identifies and resolves dilemmas related to the profession of an aerospace engineer

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam from lecture, passing laboratories on the basis of completed tasks / exercises.

Programme content

1. Introduction, standardization in engineering drawing.
2. Projection of 3D objects on the plane of the drawing.
3. Presentation of object interior with the use of sectional views, types of sectional views.
4. Presentation of object cross-section with the use of revolved section.
5. The application of geometrical constructions for drawing the objects.
6. Lines of intersection of typical solids.
7. Dimensioning.
8. Tolerances for production drawings and fits for assembly drawings.
9. Geometrical Product Specification.
10. Production drawings for shaft and hub. Splines.
11. Production drawings for gear wheels.

12. Assembly drawings of screw joints and splined connections.

13. Simplifications for rolling bearings drawings.

14. The principles of drawing welds and welded joints.

15. The design of bearing modulus.

16. The analysis ("reading") of assembly drawings.

PART - 66 (THEORY - 11.25 hours, PRACTICE - 11.25 hours)

MODULE 7A. MAINTENANCE ACTIVITIES

7.5 Engineering drawings, charts and standards

Types of technical drawings, charts, their symbols, dimensions, tolerances and projections;

Name tag identification information;

Microfilms, microcards and computer presentations;

US Air Transport Association (ATA) Specification 100;

Aviation and other applicable standards along with ISO, AN, MS, NAS and MIL;

Electrical installation charts and schematic diagrams. [2]

7.6 Fits and Clearance

Drill sizes for bolt holes, classes of fits;

Commonly used registration and clarification system;

Fit and clearing schedule for aircraft and engines;

Limits for bending, twisting and abrasion;

Standard methods for checking shafts, bearings and other parts. [2]

Teaching methods

1. Lecture: multimedia presentation, supplemented with examples given on the board

2. Laboratories: Illustrated teaching boards or multimedia presentations, supplemented with examples on the board; performing the tasks given by the teacher ¬ practical exercises

Bibliography

Basic

1. Dobrzański T., Rysunek techniczny maszynowy, WNT, W-wa 1997.

2. Lewandowski T., Rysunek techniczny dla mechaników, WSiP, W-wa 2009.

3. Bajkowski J., Podstawy zapisu konstrukcji, Oficyna Wyd. Polit. Warszawskiej, 2014

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

4. Jankowski W. Geometria Wykreślna. Wydawnictwo P.P. 1999 r.

6. Korczak J., Prętki Cz. Przekroje i rozwinięcia powierzchni walcowych i stożkowych. Wydawnictwo P.P. 1999 r.

7. Loska J., Zbiór zadań ćwiczeniowych z rysunku technicznego, Wyd. Politechniki Śląskiej, Gliwice 1982

Additional

1. Freuch T.E., Vierck C.I., Fundamentales of engineering drawing, McGraw-Hill Book Co., New York 1960.

2. Freuch T.E., Vierck C.I., Engineering drawing and grafic 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	47	2,0
Student's own work (literature studies, preparation for laboratory classes, preparation for lecture test) [1]	53	2,0

[1] delete or add other activities as appropriate