COURSE DESCRIPTION CARD - SYLLABUS

Course name
Engineering drawing [S1IMat1>GrafInż]

Course

Field of study
Materials 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
0

Tutorials
15

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr inż. Maciej Berdychowski
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Lecturers

Prerequisites

Fundamental knowledge on geometry and stereometry.

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. the student recognizes and explains the construction of parts and assemblies of machine elements on the basis of technical drawings and kinematic diagrams [k_w05]
2. the student selects the best graphic methods to be used in a given situation when creating drawing documentation, prepares technical drawings [k_w06]

Skills:
1. the student has the ability to sketch, read and prepare technical drawing documentation

[k_u01,k_u02,k_u05,k_u17]

Social competences:
1. the student follows the adopted rules of engineering graphics - [k_k05]
2. the student is aware of the use of unified drawing rules in order to be understandable within people interested in the transmission of information - [k_k04]
3. the student is aware of the role played by the graphic form of communication in the process of technical design - [k_k05]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
1. Lecture: written exam
2. Exercises: credit based on the completed tasks / exercises.

Programme content

Basics of preparing technical documentation - technical drawing.
Projection, cross-sections, dimensioning, normalization in technical drawing.

Course topics

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.

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

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	40	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	35	1,00