COURSE DESCRIPTION CARD - SYLLABUS

Course name
Geometry and engineering graphics [N1Eltech1>GiGI]

Course

Field of study
Electrical 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
part-time

Requirements
compulsory

Number of hours

Lecture
10

Laboratory classes
10

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

3,00

Coordinators

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Lecturers

dr inż. arch. Borys Siewczyński
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Prerequisites

Fundamental knowledge on geometry, mathematics, engineering knowledge

Course objective

Mastering the basic principles of creating design graphics and imaging of space in technical drawings. Acquiring the ability to read technical drawing documentation. Understanding the importance of modern digital computer methods in technical drawing.

Course-related learning outcomes

Knowledge:
1. Has knowledge of the life cycle, design and operation of power equipment and systems, knows and understands the principle of their operation
2. Knows and understands the principles of graphic construction mapping, projection, cross-sections, dimensioning in engineering applications
3. Zna i rozumie podstawy stosowania prawa autorskiego i ochrony własności przemysłowej i intelektualnej, wie jak korzystać z zasobów informacji patentowej

Skills:
1.Can read and understand catalog cards, application notes, standards and technical documentation as well as manuals.
2. Is able to develop project documentation of an engineering task, using appropriately selected methods, techniques, tools and materials

Social competences:
1. Is able to think and act in an entrepreneurial manner in the field of engineering

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Written exam from lecture, passing laboratories on the basis of completed tasks / exercises.

Programme content

During the lectures basic information about depicting a designed space in technical drawing are presented. Also the historical context of developing graphical techniques is shown. The design graphics is presented as instrument of sharing information between engineers. The rules of composition in graphics are discussed, as well, as topics related to ability to read urban and architectural designs. During the lectures and laboratories the elements graphical drawing symbols and code will be presented and practical exercises conducted. The practical examples of usage of geometry and graphics will be shown.
The necessity of continuing graphics training is shown as element improving efficiency ond quality of engineers work.

Course topics

Lectures:

1. Introductory informations, the role of graphic recording in engineering practice.
2. Methods of mapping three-dimensional objects on the drawing plane.
3. Drawing standards.
4. Graphic representation of objects at various scales of studies
7. Dimensioning
8. Form of providing documentation, good practices in this field.
9. Lettering, aesthetics and communication skills of graphic notation, elements of composition and visual identification.
10. Degrees of accuracy in graphical notation.
11. Drawing inventarisation in engineering practice
12. Reading maps, land development projects, role of GIS, reading drawings.
13. Introduction to drawing inter-branch coordination
14. Engineering computer graphics, CAD, BIM

Laboratories:
Preparation of studies regarding:
1. Drawing inventarization
2. Technical drawing using drawing standards
3. Three-dimensional imaging as technical drawing

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. Thomae R., Perspektywa i aksonometria, Arkady 1998
2. Hanna i Jerzy Samujłło., Rysunkek techniczny i odręczny w budownictwie, Arkady 1997

Additional
1. Jankowski W. Geometria Wykreślna. Wydawnictwo P.P. 1999 r.
2. Polskie Normy: PN-B-01030, PN-B-01025, PN-B-01027, PN-B-01029
3. Bajkowski J., Podstawy zapisu konstrukcji, Oficyna Wyd. Polit. Warszawskiej, 2014

Breakdown of average student's workload

	Hours	ECTS
Total workload	80	3,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	50	2,00