



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Descriptive Geometry

Course

Field of study

Environmental Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr Marian Liskowski

Responsible for the course/lecturer:

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Faculty of Control, Robotics and Electrical
Engineering

Prerequisites

Basic knowledge of the geometry defined by the core curriculum of mathematics education at the advanced level in secondary school.

Course objective

1. Equip student's ability to visualize the spatial forms of an engineering and geometrical methods to solve some of the problems in the field of engineering.
2. Developing the capacity of spatial vision.

Course-related learning outcomes

Knowledge

1. Students have knowledge of the principles of presenting spatial formations on a plane by means of projection onto two orthogonal viewports.



2. Students have knowledge of the rules for reading drawings obtained by the above method.
3. Students have knowledge of the principles of presenting spatial formations on a plane by means of axonometric projection.

Skills

1. Students are able to present on the plane data explicitly or created imaginary geometric forms.
2. Students are able to imagine a spatial forms on the basis of flat image.
3. Students can construct intersections of planes with solids, intersections of surfaces and developments of surfaces and polyhedrons (pyramids and prisms).
4. Students are able to perform axonometric projections solid figures taken from the practice of engineering.

Social competences

1. Students are aware of the importance of technical drawing as a way to communicate relevant technical sciences.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired during lectures is verified by means of a test consisting of 10 questions. Passing threshold: 60%.

Skills acquired during tutorials are verified on the basis of two tests. Passing threshold: 55%

Programme content

1. Orthographic projections onto two mutually perpendicular planes, views of a point and views of a straight line.
2. Intersections of planes, intersection of plane and polyhedron, intersection of plane and surface. Developments of pyramids and prisms, developments of cones and cylinders.
3. Conic curve constructions.
4. Intersections of surfaces.
5. Axonometric projections.

Teaching methods

Lecture: multimedia presentation supplemented by examples given on the board.

Tutorials: practical exercises supplemented with multimedia presentations. Performing tasks given by the teacher. Detailed reviewing of task solutions, discussions on solutions.

Bibliography



Basic

1. B. Grochowski, Geometria wykreślna z perspektywą stosowaną, Wydawnictwo Naukowe PWN, 2010
2. J. Korczak, Cz. Prętki, Przekroje i rozwinięcia powierzchni walcowych i stożkowych, Wydawnictwo Politechniki Poznańskiej, 2007

Additional

1. W. Mierzejewski, Geometria wykreślna, Oficyna Wydawnicza Politechniki Warszawskiej, 2006
2. W. Jankowski, Geometria wykreślna, Wydawnictwo Politechniki Poznańskiej, 1999

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for tutorials, preparation for tests) ¹	45	1,5

¹ delete or add other activities as appropriate