



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

DESCRIPTIVE GEOMETRY WITH ELEMENTS OF MATHEMATICS 1

### Course

Field of study

ARCHITECTURE

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

I/1

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

15

Tutorials

30

Laboratory classes

0

Projects/seminars

0

Other (e.g. online)

0

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

dr Jacek Gruszka

Institute of Mathematics

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Responsible for the course/lecturer:

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### Prerequisites

Knowledge of algebraic conversions, basic concepts and geometrical dependences on secondary school level. Knowledge and application of basic geometrical structures. Knowledge of limitations of own knowledge and understand the need for further education.

### Course objective

The ability to geometrical mapping and transformation of objects in space onto two-dimensional plane; learning restitution methods; understanding record drawings.

### Course-related learning outcomes

Knowledge

B.W4. mathematics, space geometry, statics, material strength, shaping, construction and dimensioning of structures, to the extent necessary to formulate and solve tasks in the field of architectural and urban design;

B.W7. ways of communicating the idea of architectural, urban and planning projects and their development;

Skills

B.U4. develop solutions for individual building systems and elements in terms of technology, construction and materials;

Social competences

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

- 3 Tests per term, evaluation in points: 0-20 points.
- Homework – 2x project in A3 format, essential quite correct, there is assessed the quality of work, evaluation in points: 5-10 points.

Final grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0

Summative assessment:

- Credit of classes and lectures based on mentioned above documented knowledge and skills.

Final grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0

Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.

### Programme content



- Invariants of parallel projection
- Belonging and shared elements
- Transformation of projective plane system, transformation of solid figure
- Transformations in measuring tasks
- Revolutions and rabattements
- Geometry of roofs
- Orthogonal axonometry. Oblique axonometry
- Shadows in axonometry.
- Shadows in orthographic projections
- Intersection of polyhedrons
- Conic curves
- Section of cylinder and cone

### Teaching methods

1. Problem lecture with multimedial presentation.
2. Classes - classical problem method.

### Bibliography

#### Basic

1. W. Jankowski, Geometria wykreślna Wydawnictwo Politechniki Poznańskiej, Poznań 1993 ,
2. B. Grochowski, Geometria wykreślna z perspektywą stosowaną Wydawnictwo Naukowe PWN, Warszawa 1999

#### Additional

1. Otto F., Otto E., Podręcznik geometrii wykreślnej, PWN, Warszawa 1979
2. Korczak J., Prętki Cz., Przekroje i rozwinięcia powierzchni walcowych i stożkowych, Wydawnictwo PP, Poznań 1993



### Breakdown of average student's workload

	Hours	ECTS
Total workload	88	3,0
Classes requiring direct contact with the teacher	52	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	36	2,0

<sup>1</sup> delete or add other activities as appropriate