COURSE DESCRIPTION CARD - SYLLABUS

Course name
Descriptive Geometry with Elements of Mathematics 1 [S1Arch1E>GWZEM1]

Course

Field of study
Architecture

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
30

Projects/seminars
0

Number of credit points

4,00

Coordinators

Lecturers

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:
Student knows and understands:
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:
Student can:

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

Social competences:
Student is capable of:
B.S2. reliable self-assessment, formulating constructive criticism regarding architectural and urban planning activities.

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.
Lecture:
Formative assessment:
periodic control of learning progress, active participation in classes
Accepted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.
Percentage of grades: 0–50% - 2.0 (insufficient); 50-60% - 3.0 (sufficient); 60-70% - 3.5 (sufficient plus); 70-80% - 4.0 (good); 80-90% - 4.5 (good plus); 90-100% - 5.0 (very good).
Summative assessment:
a final test or (if an exam is included in the curriculum) a written exam
Accepted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.
Percentage of grades: 0–50% - 2.0 (insufficient); 50-60% - 3.0 (sufficient); 60-70% - 3.5 (sufficient plus); 70-80% - 4.0 (good); 80-90% - 4.5 (good plus); 90-100% - 5.0 (very good).

Tutorials:
Formative assessment:
periodic control of learning progress (tests), active participation in classes
Accepted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.
Percentage of grades: 0–50% - 2.0 (insufficient); 50-60% - 3.0 (sufficient); 60-70% - 3.5 (sufficient plus); 70-80% - 4.0 (good); 80-90% - 4.5 (good plus); 90-100% - 5.0 (very good).
Summative assessment:
a final test
Accepted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.
Percentage of grades: 0–50% - 2.0 (insufficient); 50-60% - 3.0 (sufficient); 60-70% - 3.5 (sufficient plus); 70-80% - 4.0 (good); 80-90% - 4.5 (good plus); 90-100% - 5.0 (very good).

Programme content

Invariants of parallel projection . Belonging and shared elements
• Transformation of projective plane system and its applications.Revolutions and rabattements
• Geometry of roofs
• Axonometry.
• Intersection of polyhedrons .
• Shadows .
• Conic curves . Section of surfaces
• Perspective

Course topics

• 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
• Perspective: measuring points, shadows of surfaces, polyhedra, mirrors

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	100	4,00
Classes requiring direct contact with the teacher	45	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	55	2,00