POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Descriptive Geometry with Elements of Mathematics 2 [S1Arch1>GWzEM2]

Course

Field of study
Architecture

Year/Semester
1/2

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
0

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr Jacek Gruszka
jacek.gruszka@put.poznan.pl

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:
• Written exam.
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

• Section and intersection the surfaces
• Shadows on the surface
• Direct perspective
• Intermediate perspective, measuring points
• Shadows in perspectives,
• Front perspective, perspective of a circle

Course topics

• Section through the surface (cone)
• Intersection the surface (method of managerial planes)
• Intersection the surface (method of clipping planes)

- Shadows to the surface and interior
- Shadows to the inside of vaults
- Direct perspective, scales of confluence, shadows in parallel illumination to the background
- Intermediate perspective, measuring points, points of partial measuring. Cone perspective
- Shadows in perspectives, shadows to interior
- Front perspective, perspective of a circle
- Perspective of mirror reflections

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
3. Bartel K., Perspektywa malarska tom 1, PWN, Warszawa 1955

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
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)	30	1,00