Course title: Engineering description	**Neptun code: GEAGT403-a** **Number of credits: 4**
Name and position of course coordinator: Zsuzsanna Óváriné Dr. Balajti, Associate Professor, habilitated.	
Suggested semester: autumn and spring	
Weekly lecture + seminar hours: 2 + 0	
Assessment: colloquium	
Course webpage: -	

Course objectives:

The aim of the subject is to develop a practical approach to the space, a constructive sense of geometry and the ability to work as drawer. At selecting the curriculum, the basic geometric knowledge essential for engineering practice is systematized in an effort to develop independent application skills.

Course content and structure:

Visual representation during engineering description. Conditions of reconstructibility. Properties of perpendicular projections, dimensionally correct relationship between 3D and 2D. Constructive geometric representation of polyhedron, sphere, cone, cylinder, helicoid surface. Interpolation, approximation curves and surfaces, splines. Movement geometry and production geometry approach to the creation of complicated surfaces. Linear algebraic aspects of constructive geometry. Relationships between perpendicular projections and computer-aided engineering design.

Evaluation method:

Written exam.
Evaluation:

85-100 points	excellent (5)
70-84 points	above average (4)
55-69 points	average (3)
40-54 points	below average (2)
0-39 points	unsatisfactory (1)

Required reading:

1. Pottmann, H., Asperl, A., Hofer, M., Kilian, A.: Architectural geometry, Bentley Institute Press, 2010.
2. Kathryn Holliday-Darr: Applied Descriptive geometry, Delmar, Cengage Learning, 1998.

Suggested reading:

1. Adrian B. Biran, Ruben Lopez-Pulido, Avraham Banai: An analytical introduction to Descriptive Geometry, Prepared for Elsevier (Butterworth-Heinemann), Oxford, UK Samples - August 2005.
2. David Salomon: Curves and Surfaces for Computer Graphics, Springer Science Business Media, Inc. 2006.