

# DESCRIPTIVE GEOMETRY, ENGINEERING AND MACHINE GRAPHICS

## COURSE SYLLABUS ABSTRACT

**Speciality** 7-07-0732-01 «Construction of buildings and structures»

**Concentration** «Industrial and civil construction»

	STUDY MODE	
	Full-time	Part-time
Year	1	1
Semester	1, 2	1, 2
Lectures, hours	34	6
Practical classes, hours	68	12
Exam, semester	1	1
Pass / fail, semester	2	2
Contact hours	102	26
In-class test (semester, hours)	–	1, 2 (8 hours)
Independent study, hours	114	190
Total course duration in hours / credit units	216/6	

### 1. Course outline

Introduction. Projections of a point, a straight line, a plane. The intersection of surfaces in case one occupies a projecting position. Cutting plane method. Method of concentric spheres. Projection plane replacement method. The method of rotation around straight lines. Projections with numerical marks. Design of earthworks on a topographic surface. Perspective. Architects method. Building shadows.

Kinds. Construction of three projections of the technical form. Algorithm for constructing pitched roofs. Axonometric projections. Cuts and sections. Thread. Threaded connections. Working drawings of details. Drawings of metal structures. Drawings of reinforced concrete structures.

### 2. Course learning outcomes

Upon completion of the course, students will be expected to

- **know:** the methods of projection in the system of projection of a point on a plain, a straight line, a plane and a surface; principles of construction of the intersection of geometric shapes; algorithm for constructing the boundaries of earthworks in projections with numerical marks; algorithm for constructing a linear perspective; GOST ESKD and SPDS.
- **be able to:** solve positional, metric and complex problems, use standards and reference books, computer graphics tools when making drawings.
- **to possess a skill:** the methods of presenting details and the skills of reading construction drawings, the methods of using computer technology to construct drawings, the rules for drawing up construction documentation.

### 3. Competencies

To carry out graphic constructions on a plane and in space to solve professional problems.

### 4. Requirements and forms of midcourse evaluation and summative assessment

A module-rating system for assessing knowledge is used. Intermediate control of progress is carried out on the basis of the performance and defense of a number of graphic individual tasks with scoring. The current attestation is carried out in the form of an exam (1st semester) and a test (2nd semester).