

Educational component syllabus OK 2.6

(conventional designation OK in the educational program (EP))

Descriptive geometry, engineering and computer graphics Course I (semester I, II)

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Teachers:

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The volume of the educational component: 7 credits (48 hours of classroom work, 53 hours of independent work - the first semester, 48 hours of classroom work, 26 hours of independent work - the second semester)

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Brief content of the educational component: the academic discipline "Descriptive geometry, engineering and computer graphics" is compiled in accordance with the educational program for the preparation of bachelors "Computer-aided design and operation of construction and road machines" in the specialty 133 "Industrial engineering" of the branch of knowledge 13 "Mechanical engineering", developed based on the draft industry standard of higher education, taking into account the experience of training specialists in mechanical engineering and refers to the cycle of natural science (general economic) training. The discipline contains theoretical and practical developments of scientific and methodological foundations and standards in the field of a pedagogically adapted system of concepts about methods and algorithms for modeling three-dimensional objects and developing design documentation using modern computer programs (based on the Autodesk AutoCAD package).

Prerequisites for the study of the educational component: the discipline is based on the preliminary training of students in geometry, stereometry, physics, drawing and computer science in the framework of programs of institutions of secondary technical education, as well as knowledge on the basics of fundamental sections of higher mathematics,

general physics, computer science and computer technology in accordance with the requirements of the chosen profession.

Competencies: Ability to learn and master modern knowledge, strive for self-development. Ability to work in a team and autonomously. Ability to solve promising problems of modern production aimed at meeting consumer demand. Formation of knowledge, skills and abilities to create computer models of products and documentation design, drawings and images for various purposes, solving engineering and geometric problems, developing the ability to spatial thinking, mastering the methods of reflections on the plane of spatial objects, developing skills and abilities to execute and read drawings according to the conditions of ESKD, GOST, as well as the ability to create drawings using modern computer graphics software. Develop and reinforce logical and creative engineering thinking.

Teaching methods, forms and methods of assessment: computer and classroom workshops, which are held in specially equipped computer classrooms and include monitoring the preparation of students, completing planned tasks, completing individual tasks, current and final control of students' work. The final grade is put in the logbook of the computer and classroom workshop and is taken into account when determining the semester ranking. The presence of positive points received by the student for all topics of the workshop and current testing on a PC is a prerequisite for his admission to semester control - test.

Recommended reading:

1. N. Krylov, P. Lobandievski, S. Maine Geometrie Descriptive Moscow: Editions MIR, 1971. – 360 p.
2. A.T. Chahly Descriptive Geometry Moscow: Higher School Publishing House, 1968. – 308 p.
3. Colin H. Simmons, Neil Phelps, Dennis E. Maguire. Manual of engineering drawing. Third edition. 2009. – 318 p.

Additional sources:

4. K. Morling. Geometric and Engineering Drawing. Third Edition. 2010. – 360 p.

Informational resources:

<http://files.khadi.kharkov.ua>; mechanical faculty, department of engineering and computer graphics.