

MECHANICS OF MATERIALS

COURSE SYLLABUS ABSTRACT

6-05-0715-03 Cars, tractors, mobile and technological complexes

(speciality code and name)

Computer engineering in lifting and transport engineering, Computer engineering in construction and road engineering, Computer engineering in the automotive industry

(concentration)

6-05-0715-07 Operation of land transport and technological facilities machines and complexes

(speciality code and name)

Technical operation of cars, Car service

(concentration)

| | STUDY MODE | | | |
|---|--------------|--------------|---|----------------------------------|
| | full-time | | part-time | part-time (shortened program) |
| Speciality | 6-05-0715-03 | 6-05-0715-07 | Concentration «Technical operation of cars» | |
| Year | 2 | 2 | 3 | 1 |
| Semester | 4 | 4 | 5 | 2 |
| Lectures, hours | 34 | 34 | 8 | 8 |
| Practical classes, hours | 34 | 34 | 8 | 4 |
| Laboratory classes, hours | 16 | 16 | 4 | 4 |
| In-class test (semester, hours) | - | - | 5 (2 часа) | - |
| Exam, semester | 4 | 4 | 5 | 2 |
| Contact hours | 84 | 84 | 22 | 16 |
| Independent study, hours | 96 | 60 | 122 | 128 |
| Total course duration in hours / credit units | 180/5 | 144/4 | 144/4 | 144/4 |

1. Course outline

The study of the basic concepts, laws and methods of mechanics of materials and their application for the calculation of typical structural elements, mechanical gears, working bodies of machines and mechanisms for strength, rigidity and stability.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- the main hypotheses of the mechanics of materials about the properties of structural materials and the character of deformation;
- general requirements for structural materials;
- methods for calculating typical structural elements for strength, rigidity and stability;
- methods of experimental investigation of stresses and strains;

be able to:

- to apply in practice methods and approaches to solving engineering problems of calculating structures, parts and assemblies of machines for strength, rigidity and stability;
- to investigate stresses and deformations by experimental methods;
- to carry out the formulation of tasks taking into account the complex operational conditions of the functioning of the object under study;

to possess a skill:

- theoretical and experimental analysis of structures for strength, rigidity and stability, taking into account the properties of structural materials;
- calculation of structures for their optimal use;
- calculation of parts and assemblies for strength.

3. Competencies

Specialty 6-05-0715-03: «To carry out calculations for strength, rigidity and stability of structures»;

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4. Requirements and forms of midcourse evaluation and summative assessment

When studying the discipline, a modular rating system for assessing students' knowledge is used, intermediate certification – exam.