MECHANICS OF MATERIALS AND CONSTRUCTIONS

COURSE SYLLABUS ABSTRACT

Specialty 1-36 11 01 – Innovative equipment for the construction complex(by directions)
Specialisation 1-36 11 01-01 – Инновационная техника для строительного комплекса (производство и эксплуатация); 1-36 11 01-01 01 – Innovative equipment for the construction and operation of highways

	STUDY MODE
	full-time
Year	2
Semester	3,4
Lectures, hours	68
Practical classes (seminars), hours	34
Laboratory classes, hours	32
Pass/fail, semester	3
Graded exam, semester	4
Contact hours	134
Independent study, hours	118
Total course duration in hours / credit units	252/7

1 The purpose of the discipline – is to form students' skills in carrying out calculations of typical structural elements, mechanical gears, working bodies of machines and mechanisms for strength, rigidity, stability and durability.

2. Upon completion of this course, the students will be expected to

know:

− the main hypotheses of the mechanics of materials about the properties of structural materials and the nature of deformation;
− methods for calculating typical structural elements for strength, rigidity and stability;
− methods of experimental study of stresses and deformations;

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;

possess:

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

3. Competencies to be developed

Upon completion of this course the following competencies must be developed:

BPC-6 (basic professional competence) – To choose the forms of structural elements operating in difficult operating conditions under the influence of static and dynamic loads, taking into account temperature exposure and duration of operation, to compare versions and obtain the optimal solution according to the specified parameters.

4. Summative and mid-course assessment requirements and methods

When studying the discipline, a modular rating system for assessing students' knowledge is used. Forms of classes: traditional.