

REINFORCED CONCRETE AND STONE STRUCTURES

COURSE SYLLABUS ABSTRACT of higher education institution speciality

1–70 02 01 Industrial and Civil Engineering (speciality code and name)

	STUDY MODE		
		full-time	
Year		3	
Semester		5, 6	
Lectures, hours		50	
Practical classes, hours		50	
Laboratory classes, hours		16	
Course project, semester		6	
Pass/fail, semester		5	
Exam, semester		6	
Contact hours		116	
Independent study, hours		100	
Total course duration in hours / credit units		216/6	

1. Course outline. 1. General information about reinforced concrete. 2. Basic physical and mechanical properties of concrete, reinforcement, reinforced concrete. 3. Experimental foundations of the theory of resistance of reinforced concrete. The main provisions of design methods. 4. Methods for calculating the resistance of sections normal to the longitudinal axis of a reinforced concrete element under the action of bending moments and longitudinal forces. 5. Calculations of the resistance of reinforced concrete elements to the action of transverse forces. 6. Calculation of reinforced concrete structures under local action of loads. 7. Calculation of reinforced concrete elements for the action of torques. 8. Calculation of crack resistance of reinforced concrete structures. 9. Calculation of reinforced concrete structures by deformations. 10. General principles of designing reinforced concrete structures of buildings taking into account the requirements of the construction economy. 11. Flat floors of buildings. 12. Reinforced concrete foundations of shallow laying.

2. Course learning outcomes. Upon completion of the course, students will be expected to

know: the role of the national school of calculation, design, research in the development of reinforced concrete and stone structures; physical and mechanical characteristics of materials of reinforced concrete and stone structures; progressive methods of calculation and construction of reinforced concrete and stone structures; normative mandatory and recommended literature;

be able to: make an economic assessment and justification of the reinforced concrete and stone structures used in buildings and structures; on the basis of the developed structural schemes of buildings or structures, perform calculations of reinforced concrete and stone structures, as well as their joints and joints; use computers in calculations and construction of reinforced concrete and stone structures;

to possess a skill: possession of modern methods of calculation of reinforced concrete and stone structures; ownership of software complexes in the design and calculation of iron-ton and stone structures; construction and calculation of floors made of monolithic and precast reinforced concrete; design and calculation of columns, pillars, covering structures, foundations.

3. Competencies. Possess the basics of research, search, analyze and synthesize information. Take the initiative and adapt to changes in professional activities. Apply technical regulatory legal acts on the design of metal, reinforced concrete, stone, wooden and plastic structures to solve engineering and construction problems.

4. Requirements and forms of midcourse evaluation and summative assessment. The current certification of students is carried out to determine the compliance of the results of their educational activities with the requirements of educational standards, educational and program documentation of educational programs of higher education. The form of current student certification is a credit and an exam. The current certification is carried out orally and in writing.