

STRUCTURAL LIGHTWEIGHT AGGREGATE CONCRETE

(course title)

COURSE SYLLABUS ABSTRACT

7-06-0732-01 "Construction"

(speciality code and name)

"Industrial and civil construction"

(specialisation code and name)

	STUDY MODE	
	full-time	part-time
Year	2	2
Semester	3	4
Lectures, hours	34	8
Pass/fail, semester	3	4
Contact hours	34	8
Independent study, hours	68	94
Total course duration in hours / credit units	102/3	

1. Course outline. 1. Production of lightweight aggregates and its properties. 2. Supplementary cementing materials. 3. Mix proportioning. 4. Lightweight aggregate concrete microstructure. 5. Physical properties of lightweight aggregate concrete. 6. Fundamentals of the design of reinforced concrete structures made of lightweight concrete. 7. Features of expanded clay concrete at the stage of microcracking. 8. Expanded clay fiber-reinforced concrete with polypropylene fiber.

2. Course learning outcomes. Upon completion of the course, students will be expected to **know:** the role of the national school in the design of buildings and structures made of concrete on porous aggregates; products of expanded clay plants in the Republic of Belarus, its technical characteristics; research by scientists from Belarus, neighboring countries and far abroad in the development of calculation and construction methods using lightweight concretes; modern computational models of cross-sectional resistance of reinforced concrete structures from lightweight concrete;

be able to: choose materials for the manufacture of lightweight concretes; determine the strength and deformation characteristics of lightweight concretes, including those with fiber reinforcement;

to possess a skill: applying mathematical statistics and probability theory methods in determining the strength and deformation characteristics of building materials; applying modern methods of calculation and design of building iron-concrete structures of buildings and structures made of light concrete.

3. Competencies: to use innovative methods and technologies in the design, organization, construction and manufacture of building structures of buildings and structures, the foundations of industrial and civil buildings.

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 program documentation of educational programs of higher education. The form of intermediate certification of students is a credit. The intermediate certification is conducted orally.