

ENGINEERING GEOLOGY

(course title)

COURSE SYLLABUS ABSTRACT

7 – 07 – 0732 – 01 «Construction of buildings and structures»

(speciality code and name)

« Highways»

(concentration)

	STUDY MODE	
	full-time	part-time (shortened program)
Year	3	3
Semester	5	5
Lectures, hours	34	8
Laboratory classes, hours	16	4
Pass/fail, semester	5	5
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	

1. Course outline

The purpose of the discipline is to study the laws of the Earth's crust formation; the influence of exogenous and endogenous processes occurring in the Earth's crust; the study of foundation soils found in the territory of the Republic of Belarus.

The objectives of the discipline are: assessment of geological conditions and physical and mechanical properties of rocks of the construction area; assessment of technological and strength properties of sedimentary minerals; development of recommendations necessary for engineering preparation of the construction territory and deposits taking into account the requirements of geological environment protection; justification of the most rational types and designs of structures, location of facilities technological schemes and methods of works and materials with optimisation of technical and economic and technical-economical aspects of the construction process.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: governmental decisions in the field of capital construction in relation to the tasks of engineering geology; basic physical and mechanical properties of minerals and rocks, allowing to increase the efficiency of the decisions taken; basics of hydrogeology, conditions of occurrence and mode of movement of underground water; methodology of engineering-geological surveys for industrial and civil construction; methodology of creation of monitoring of geological environment, both at individual construction sites and on a regional scale.

be able to: use the results of engineering-geological surveys, read maps and geological cross-sections when performing design, construction works and organisational and technical works; recognise the most common minerals and rocks used as natural building materials; recognise the most important geological processes arising during construction and operation of structures; optimally solve the most important problems of geological environment protection.

to possess a skill: o determine the basic and derived physical and mechanical characteristics of soils of foundations; to carry out engineering-geological surveys and observations and skills to draw up a report on the field and desk work performed; to read and construct engineering-geological sections; to read and construct maps of isohypses and horizontals; to determine reliable foundations capable of taking the load from buildings and structures.

3. Competencies

Evaluate geological processes in the Earth's crust to determine the material composition and characteristics of natural stone materials used in construction.

4. Requirements and forms of midcourse evaluation and summative assessment

The form of intermediate attestation is lecture questioning and defence of laboratory works, which are conducted orally. The form of current certification is a credit.