ROAD SOIL SCIENCE AND EARTHWORK MECHANICS
(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 | 2, 3 | 2, 3 |
| Semester | 4, 5 | 4, 5 |
| Lectures, hours | 50 | 12 |
| Laboratory classes, hours | 32 | 8 |
| Course paper, semester | 5 | 5 |
| Exam, semester | 4, 5 | 4, 5 |
| Contact hours | 82 | 20 |
| Independent study, hours | 170 | 232 |
| Total course duration in hours / credit units | 252/7 | 252/7 |

## 1. Cours outline

The purpose of teaching the discipline «Road soil science and earthwork mechanics» is: formation of students' knowledge of the elements of engineering geology; types of soils.

The objectives of the discipline are: to study engineering-geological conditions on the territory of the Republic of Belarus; study of the properties of soil properties used in the construction of the highway subgrade; study of types and characteristics of soils; study of types and characteristics of soils; study of the basics of soil mechanics; gaining knowledge about the strength of soils, their stressed state, methods of compaction, rheology, slope stability.

## 2. Course learning outcomes/ Upon completion of the cource. students will be expected to

**know:** basics of general and engineering geology and hydrogeology; general physical and physical-mechanical characteristics of soils and mathematical expressions for their determination; theory of soil strength, theoretical prerequisites of soil compaction; theory of slope stability and methods of determining indicators characterizing their stability; theoretical prerequisites and classification of soil strengthening methods;

**be able to:** conduct engineering-geological surveys for the construction of roads; determine the general physical and physical-mechanical properties of soils; determine the deformation properties of soils; calculate indicators characterizing the stability of the slope and retaining wall.

**to possess a skill**: use methods of engineering-geological surveys; methods of determining general physical and physical-mechanical properties of soils; methods and techniques of working on laboratory and field equipment; methods of calculating indicators characterizing the stability of the slope and retaining wall; analyze the results of field and laboratory studies of soil properties.

## 3. Emerging competencies

– Apply methods of scientific knowledge in research activities, generate and implement innovative ideas
– Apply the basic rules and methods of geodetic measurements in construction
– Perform stability calculations of highway subgrade structures

## 4. Requirements and forms of midcourse evalution and summative assessment

The form of intermediate attestation is lecture questioning and defense of laboratory works, which are conducted orally. The form of current certification is an exam.