

SYLLABUS

Name: Engineering Geology and Soil Mechanics (BudAB>SI3ENGESM19)

Name in Polish:

Name in English: Engineering Geology and Soil Mechanics

Information on course:

Course offered by department: Faculty of Civil Engineering
Course for department: Silesian University of Technology

Default type of course examination report:

ZAL

Language:

English

Course homepage:

<https://platforma.polsl.pl/rb/course/view.php?id=86>

Short description:

Objective of the course is learning the Earth's structure, fundamental concepts of geology, understanding geological processes and their influence on human engineering activities.

Description:

LECTURES: 15 hours:

- Structure of the Earth.
- Geological processes:
 - Endogenous processes- magmatism, metamorphism, diastrofizm.
 - Exogenous processes- weathering, erosion, mass movements, sedimentation.
- Geological and engineering importance of aeolian, fluvial, glacial and sea -processes.
- Engineering aspects of geology
- Basics of hydrogeology.

LABORATORY CLASSES: 15 hours

1. Macroscopic determination of soils
2. Particle-size analysis
3. Atterberg limits soil classification

Bibliography:

- [1] Książkiewicz M.: Geologia dynamiczna; Wyd. Geologiczne
- [2] Mizerski W.: Geologia dynamiczna dla...; PWN
- [3] Lenczewska-Samotyja E.: Zarys geologii z elementami geologii inżynierskiej i hydrogeologii; Oficyna Wyd.Pol
- [4] Plummer Ch., Carlson D., Hammersley L.: Physical Geology; McGraw-Hill Education
- [5] Dudko-Pawłowska I.: Geologia inżynierska dla praktyków budownictwa. TOM I Podstawowe informacje o minerałach, skałach, gruntach.; Wyd. Pol. Śl.
- [6] Kowalska M.: Geologia inżynierska dla praktyków budownictwa. TOM II Terenowe, laboratoryjne i kameralne prace geologiczno-inżynierskie.; Wyd. Pol. Śl.
- [7] Kowalski W.: Elementy nauk geologicznych dla inżynierów. Wyd. Pol. Łódzkiej
- [8] Krzowski Z.: Geologia dla inżynierów budownictwa lądowego. Wyd. Uczelniane Pol. Lubelskiej,
- [9] Stanley S.M.: Historia Ziemi, Wyd. Naukowe PWN

Learning outcomes:

KNOWLEDGE

- (1) Has a basic knowledge about Earth's structure and geological processes [K1A_W07].
- (2) Knows and understands processes of rocks' and soils' formation [K1A_W07]
- (3) Understand the influence of the quality of subsoil on the building foundation security [K1A_W07]

SKILLS

- (1) Is able to classify soil on the basis of simple tests. Know how to evaluate the quality of soils [K1A_U06].
- (2) Knows the simplest methods of subsoil identification, description and quality evaluation [K1A_U06].

Assessment methods and assessment criteria:

Prerequisites: none

FINAL GRADE:

- 40% - lecture test
- 60% - grade of laboratory classes, including:
 - 20% - macroscopic analysis of soils
 - 20% - classification and particle size analysis of soils
 - 20% - Atterberg limits soil classification

STUDENTS WHO REPEAT THE COURSE: Rewriting partial grades is not possible.

The syllabus is valid from the summer semester of the 2025/2026 academic year, and its content is not subject to change during the semester.

Element of course groups in various terms:

Course group description	First term	Last term
missing group description in English (BudAB-S1-2019-sem3)	2020/2021-Z	

Course credits in various terms:

<without a specific program>			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	3	2020/2021-Z	


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Signature