



### **1. Course number and name**

RB-S1-19-W41-A5, Engineering geology and soil mechanics I

### **2. Credits and contact hours\***

3 ECTS, lectures: 15 hours\*\*, laboratory: 15 hours\*\*

### **3. Instructor's or course coordinator's name**

Iwona Dudko-Pawłowska, PhD

### **4. Text book, title, author, and year**

- Waltham T.: Foundations of Engineering Geology; CRC Press; 2009
- Bobrowsky Peter T., Marker Brian.: Encyclopedia of Engineering Geology; Springer International Publishing AG; 2018
- Hencher Steve: Practical Engineering Geology; CRC Press; 2012
- Stanley Steven M.: Earth System History; W.H. Freeman and Company; 1999

#### **a. other supplemental materials**

- EN ISO 14688 Eurocode

### **5. Specific course information**

#### **a. brief description of the content of the course (catalog description)**

##### Lectures:

Structure of the Earth. Geological processes: endogenous and exogenous processes. Geological and engineering importance of a eolian, fluvial, glacial and sea processes. Basics of hydrology. Engineering aspects of geology.

##### Laboratory:

Macroscopic determination of rock forming minerals (of igneous and sedimentary rocks). Macroscopic determination of main types of rocks. Macroscopic determination of soils. Particle-size analysis of soils. Atterbarg limits.

#### **b. prerequisites or co-requisites**

No prerequisites and additional requirements

#### **c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program**

Required.

### **6. Specific goals for the course**

#### **a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic**

The student knows:



- main dynamic geological processes;
- geological processes creating soils and rocks;
- geological hazards.

The student can:

- recognize main minerals of igneous and sedimentary rocks;
- recognize igneous and sedimentary rocks;
- subscribe and recognize various types of soils and their consistency;
- recognize main genetical types of soils;
- execute Atterberg limits tests

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K2A\_W07, K2A\_U06

#### **7. Brief list of topics to be covered**

Structure of the Earth. Endogenous processes- magmatism, metamorphism, diastrophism.

Exogenous processes- weathering, erosion, mass movements, sedimentation. Eolian, fluvial, glacial and sea processes – in aspect of sedimentation, transport and deposition.

Basics of hydrology. Dynamic geology hazards.

\*- Consultations were not included in the contact hours

\*\* -per semester