



1. Course number and name

RB-S1-19-S77-D8, **Selected Geotechnical Problems in Civil Engineering**

2. Credits and contact hours*

2 ECTS, lectures: 30 hours**, classes: 0 hours**, project: 0 hours**

3. Instructor's or course coordinator's name

Rafał Uliniarz PhD

4. Text book, title, author, and year

- Holtz R.D., Kovacs W.D.: An Introduction to Geotechnical Engineering, Prentice-Hall.
- Arnold M.: The genesis, Mineralogy and Identification of Expansive Soils, 5th Int. Conf. "On Expansive Soils"
- Gryczmański M.: Wprowadzenie do opisu sprężysto-plastycznych modeli gruntów, KILiW PAN.
- Puzrin A.M., Alonso E.E.: Geomechanics of Failures, Springer.
- Mitchel & Soga: Fundamentals of soil behavior.

a. other supplemental materials

- Lime-treated soil. Construction manual. Lime stabilisation & lime modification. National Lime Association.

5. Specific course information

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

Lectures:

Basic information, various geotechnical problems, geotechnical solutions.

Classes:

Project:

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

Selected elective.

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:

- have knowledge about soil-structure interaction,



- have knowledge of the use of various materials and technologies to achieve the intended geotechnical objectives, such as restriction of settlement, increase of soil bearing capacity, improvement of soil parameters etc.,
- can define assumptions and choose an adequate tool to solve geotechnical problems.

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

K1A_W07, K1A_U06

7. Brief list of topics to be covered

1. Basic information: structure-subsoil cooperation.
2. Slope stability.
3. Deformation problem of foundations.
4. Tunneling geotechnical problems.
5. Soil improvement.

*- Consultations were not included in the contact hours

** -per semester