

Study program:	Civil Engineering
Level of study:	Undergraduate academic studies or Master academic studies or PhD studies
Course title:	SOIL MECHANICS
Teacher:	PETAR SANTRAČ
Course Status:	Obligatory
Credits (ECTS):	6
Prerequisite:	Math 1-2-3, Mechanics 1-2, Strength of Materials 1-2

Course objective(s):

The course aims to provide basic knowledge from site-laboratory tests of the physical characteristics of the soil, the method of soil identification and classification and the way of forming the geotechnical substrates. After that, through practical exercises, students master the basic knowledge about the impact of water on the ground, calculation of the stress and strains in the soil, bearing capacity and settlement of shallow and deep foundations, earth pressure on the retaining walls, stability of embankment, natural and artificial slopes and application computers in soil mechanics.

Course outcome(s):

The realization of the planned objectives.

Course Content:

1 st week	Introduction, literature, legislation, soil formation and classification.
2 nd week	Field investigations, the type and extent of exploration, geomechanical profile.
3 rd week	Basic soil parameters, laboratory tests.
4 th week	Stresses and strains, the principle of effective stresses.
5 th week	Water in the soil, filtration, effective stresses, static and dynamic water pressure.
6 th week	Soil strength, type of tests.
7 th week	Soil deformability, type of tests.
8 th week	Stress and strain calculation and soil settlements.
9 th week	Stress and strain calculation and soil settlements.
10 th week	Calculation of earth pressure on retaining structures.
11 th week	Calculation of earth pressure on retaining structures.
12 th week	Bearing capacity of shallow foundations.
13 th week	Bearing capacity of shallow foundations
14 th week	Bearing capacity of deep foundations.
15 th week	Slope stability analysis.

Literature:

1. M. Maksimović: Soil Mechanics, "Građevinska knjiga", Belgrade, 2005.
2. Najdanović, Obradović: Soil mechanics in engineering practice, "Jaroslav Černi", Belgrade, 1981.
3. M. Maksimović, P. Santrač: Collection of solved examples in soil mechanics, "Grafoprodukt", Subotica, 2003.
4. E. Nonveiller: Soil mechanics and foundation construction, "Školska knjiga", Zagreb, 1990.

Number of hours:

Lectures: 3	Exercises: 3	Other forms of teaching: 0	Individual research work: 0	Other classes: 0
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Teaching methods: Lectures, exercises, seminars, consultations

Evaluation of knowledge (maximum 100 points)

Pre-exam activities	points	Final exam	points
Activity during the lectures	5	Written exam	25
Activity during the exercises	0	Oral exam	45
Seminar papers	25	-	-
Colloquias	25		