



1. GENERAL INFORMATION					
Study programme title	University graduate study programme in geological engineering Subprogramme Hydrogeology and engineering geology				
Course title	Soil Mechanics		Semester	II.	
Teacher	Prof. Biljana Kovačević Zelić, PhD		Course code		
Course type	<input checked="" type="checkbox"/> obligatory <input type="checkbox"/> election		ECTS	5	
Location	Faculty of Mining, Geology and Petroleum Engineering, Pierottijeva 6, Zagreb				
Language	<input type="checkbox"/> Croatian <input checked="" type="checkbox"/> English				
Class type	Weekly hours	Teaching staff	Office hours	Room	e-mail
Class	2	Prof. Biljana Kovačević Zelić, PhD	Thursday 12-14	P6 224	biljana.kovacevic-zelic@rgn.hr
Practice	2	Helena Vučenović, PhD; Karolina Gradiški, PhD	Thursday 12-14	P6 503	helena.vucenovic@rgn.hr ; karolina.gradiski@rgn.hr
Field lecture					
E-learning level	1	Percentage of on-line class (max. 20%)			10%
2. COURSE DESCRIPTION					
Course aims	Fundamental understanding of engineering properties and mechanical behavior of soils; application of soil mechanics principles in geotechnical engineering.				
Requirements for applicants	Basic knowledge of technical mechanics				
Programme level learning outcomes with course contribution					
Expected course level learning outcomes (4-10 outcomes)	Students will be able to: - explain the origin of soil materials, - perform simple laboratory testings for the determination of physical and index properties of soils, - perform identification and classification of soils,				



	<ul style="list-style-type: none"> - determine hydraulic and mechanical properties of soils, - describe subsurface exploration methods, - create graphical representation of field works (boring logs and profiles) and interpret the field work test results, - perform simple calculations of the settlement and consolidation, seepage, lateral earth pressure, bearing capacity and stability of slopes. 		
Course contents by individual lessons			
	Class	Class	
	P1 – Introduction. The origin and basic characteristics of soils. Phase relationships.	V1 – Phase relationships.	
	P2 – Particle size analyses. Plasticity of fine-grained soils. Relative density of coarse-grained soils.	V2 – Particle size analyses.	
	P3 – Identification and classification of soils.	V3 – Index properties.	
	P4 – Subsurface exploration.	V4 – Identification and classification of soils.	
	P5 – Proctor compaction test. Field compaction.	V5 – Laboratory testings.	
	P6 – Permeability of soils. Seepage theory.	V6 – Laboratory testings.	
	P7 – Stresses and displacement of soils.	V7 – Permeability and flow-nets.	
	P8 – Compressibility and settlement of soils.	V8 – Effective stress principle. In-situ soil stress.	
	P9 – One-dimensional consolidation theory.	V9 – Stresses due to surface loads.	
	P10 – Shear strength of soils.	V10 – Soil settlement and consolidation.	
	P11 – Stability of soils.	V11 – Shear strength testings.	
	P12 – Lateral earth pressure.	V12 – Laboratory testings.	
	P13 – Bearing capacity and shallow foundations.	V13 – Slope stability calculations.	
	P14 – Earth-retaining structures.	V14 – Active and passive earth pressure.	
	P15 – Repetition.	V15 – Bearing capacity.	
Students' obligations	<p>Obligations</p> <p>Regular presence at class (maximum absence 3), laboratory reports, 2 partial exams (written) or 1 final exam (oral)</p>		
Students' work track <i>(indicate share in ECTS points for each activity so</i>	Class attendance	1	Research
<i>)</i>	Project		Report



<i>that overall ECTS number corresponds to class credits score):</i>	Colloquium	1,5	Seminar paper	
	Practical work	1	Oral exam	1,5
	Written exam		(Extra)	
Type of exam, grades and evaluation of students work during class and on final exam	Classes and examination Prerequisite: Regular presence at classes and practical work reports (15%). Additional activities and assignments during semester (5%) 2 partial written exams (2 x 20%)+ final oral exam (40%)			
Mandatory literature (available in the Library and via other media)	R.F. Craig: Soil mechanics - 5th edition (1995), Chapman & Hall, London. John. F. Cernica (1995): Geotechnical Engineering: Soil mechanics, John Wiley & Sons, New York.			
Additional literature (at the moment of study program proposition application)	Muni Budhu: Soil mechanics and foundations, John Wiley & Sons, Inc., New York, 2000. Mitchel, J.K.: Fundamentals of soil behavior, Second edition, John Wiley & Sons, Inc., New York, 1993.			
Examination terms				
Other				

Course Teacher:

Prof. dr. sc. Biljana Kovačević Zelić

"[Kliknite mišem i upišite titulu, ime i prezime]"