

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Soil Mechanics</b>		Code <b>1010104131010100637</b>
Field of study <b>Civil Engineering First-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time,part-time) <b>part-time</b>	
No. of hours Lecture: <b>12</b> Classes: <b>-</b> Laboratory: <b>20</b> Project/seminars: <b>-</b>		No. of credits <b>5</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b>		ECTS distribution (number and %) <b>5 100%</b>
<b>Responsible for subject / lecturer:</b>  dr Michalina Flieger-Szymańska email: michalina.flieger-szymanska@put.poznan.pl tel. 61 6652136 Faculty of Civil and Environmental Engineering ul. Piotrowo 5 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The full range of knowledge in mathematics and physics included in the program of high school. The full range of knowledge included in the first and second semester of civil engineering studies.
2	<b>Skills</b>	Student: - can perform static analysis of bar structures statically determinate; - can correctly select the tools to solve problems of analysis and design building objects; - knows how to dimension the basic structural elements in buildings.
3	<b>Social competencies</b>	Student: - can work independently and work together as a team over the designated task; - he is responsible for the accuracy of the results of their work and their interpretation; - isolated complements and extends the knowledge in modern techniques, processes and technologies.
<b>Assumptions and objectives of the course:</b> Achieving the basic level of knowledge in soil mechanics, proper for I degree studies of civil engineering.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student is acquainted with construction law, national norms and EN standards and technical conditions of a building construction - [K_W06]		
2. Knows geology fundamentals, soil mechanics and foundations construction structures - [K_W08]		
3. Knows rules related to the design and analysis of residential, industrial, road, railroad and bridge structures - [K_W09]		
<b>Skills:</b>		
1. Can evaluate and list loads acting on structures - [K_U02]		
2. Can appropriately define computational models used for the structural analysis - [K_U03]		
3. Can carry out simple laboratory experiments in order to evaluate the quality of construction materials and engineering structures - [K_U13]		
<b>Social competencies:</b>		

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| 1. Can work on a problem individually and in a team - [K_K01]<br>2. Is aware of own health and fitness - [K_K04]<br>3. Is aware of the necessity to advance professional and personal competencies - [K_K06] |
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**Assessment methods of study outcomes**

- written exam (30 points available, 17 points required to pass the exam)
- written and oral tests as part of continuous assessment
- execution of the development of containing of interpreting results laboratory tests characteristics of subsoil
- execution of the development of containing the results of calculations of stress in the subsoil

**Course description**

- introduction to geotechnics
- genesis of the soil
- geotechnical characteristics of the soil
- classification of ground in according to with the content of PN and PN-EN
- physical characteristics of the soil
- water in a subsoil
- strength of the soil
- compressibility and consolidation of the soil
- geostatic stresses in the subsoil
- stress from external loads in the subsoil
- bearing capacity of the subsoil

Lectures are conducted using the information lecture method. Laboratory exercises are conducted using the laboratory and practice methods.

**Basic bibliography:**

1. Wilun Z.: Zarys geotechniki, Warszawa, WKiŁ. 2012
2. Pisarczyk St.: Gruntozawstwo inżynierskie, Warszawa, PWN 2001
3. Szymański A.: Mechanika Gruntów, SGGW, Warszawa 2007

**Additional bibliography:**

1. Jeż J.: Biogeotechnika, Poznań, Wyd. PP 2008
2. Motak E.: Fundamenty bezpośrednio, Warszawa, Arkady 1988
3. Obrycki M., Pisarczyk St.: Zbiór zadań z mechaniki gruntów, Warszawa, PW 2007

**Result of average student's workload**

Activity	Time (working hours)	
1. participation in classes and individual work	150	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	150	5
Contact hours	90	3
Practical activities	60	2