

## MODULE SPECIFICATION

Module code	
Module title in Polish	<b>Geologia</b>
Module title in English	<b>Geology</b>
Module running from the academic year	<b>2016/2017</b>

### A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	<b>Civil Engineering</b>
Level of qualification	<b>First cycle</b> <i>(first cycle, second cycle)</i>
Studies profile	<b>Academic</b> <i>(academic/practical)</i>
Mode of study	<b>Full-time</b> <i>(full-time / part-time)</i>
Specialism	
Organisational unit responsible for module delivery	<b>The Department of Geotechnical and Water Engineering</b>
Module co-ordinator	
Approved by	<b>Marek Iwański, Professor</b>

### B. MODULE OVERVIEW

Module type	<b>Core module</b> <i>(core/programme-specific/elective HES*)</i>
Module status	<b>Compulsory module</b> <i>(compulsory / non-compulsory)</i>
Language of module delivery	<b>English</b>
Semester in the programme of study in which the module is taught	<b>Semester 1</b>
Semester in the academic year in which the module is taught	<b>Winter semester</b> <i>(winter / summer)</i>
Pre-requisites	<b>None</b> <i>(module code/module title, where appropriate)</i>
Examination required	<b>Yes</b> <i>(yes / no)</i>
ECTS credits	<b>5</b>

Mode of instruction	lectures	classes	laboratories	project	others
<b>Total hours per semester</b>	<b>30</b>		<b>15</b>		

\* elective HES – elective modules in the Humanities and Economic and Social Sciences

### C. LEARNING OUTCOMES AND ASSESSMENT METHODS

<b>Module aims</b>	The aim of the module is to familiarise students with basic notions as regards geology (including natural geological processes, e.g. erosion, and anthropogenic, e.g. mining damages, for the needs of civil engineering and spatial planning). Another aim includes recognising minerals and rocks as well as knowledge of basic elements of geological and mining law.
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Module outcome code	Module learning outcomes	Mode of instruction (l/c/lab/p/ others)	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	A student has knowledge of basic geological processes, the factors causing them as well as the phenomena being a result of them.	l/l	B_W03	T1A_W01 T1A_W02 T1A_W07 T1A_W08
W_02	A student has knowledge of rocks utilised as construction materials.	l	B_W18	T1A_W02 T1A_W03 T1A_W04 T1A_W05 T1A_W07 T1A_W08
W_03	A student has knowledge which facilitates the assessment of terrain usefulness for the needs of mining (drawing particular attention to its geological structure, geomorphology and already present anthropogenic impact as well as the expected one).	l	B_W03	T1A_W01 T1A_W02 T1A_W07 T1A_W08
W_04	A student has knowledge on spatial planning as regards engineering geology.	l	B_W03	T1A_W01 T1A_W02 T1A_W07 T1A_W08
U_01	A student can make an initial assessment of geological and engineering terrain planning on the basis of the genesis, lithology, and stratigraphy of rocks.	l	B_U04	T1A_U01 T1A_U02 T1A_U03 T1A_U05 T1A_U08 T1A_U14
U_02	A student is capable of interpreting the contents of maps and geological sections.	l	B_U06	T1A_U03 T1A_U07 T1A_U15
U_03	A student can identify and assess construction surface.	l/l	B_U17	T1A_U08 T1A_U13 T1A_U14
U_04	A student can assess the possibilities of the foundation of structures on a given terrain.	l	B_U06 B_U17	T1A_U03 T1A_U07 T1A_U08 T1A_U13 T1A_U14 T1A_U15
U_04	A student can assess the possibilities of the foundation of structures on a given terrain.	l	B_U06 B_U17	T1A_U03 T1A_U07 T1A_U08 T1A_U13 T1A_U14 T1A_U15
K_01	A student can work individually and in a team in a responsible manner on the assigned task.	l/l	B_K01	T1A_K01 T1A_K03

				T1A_K04
K_02	A student is responsible for the reliability of the obtained results of his/her work (as well as its interpretation); a student is also aware of the necessity of raising his/her professional competences.	I/I	B_K02 B_K03	T1A_K01 T1A_K02 T1A_K05 T1A_K06 T1A_K07
K_03	A student takes care of the natural environment.	I/I	B_K09	T1A_K01 T1A_K02

### Module content:

#### 1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1	Introduction to geology. Earth's origin and structure. The aim of geological examination.	W_01 W_03 W_04 U_03 K_03
2	Classification of geological processes. Endogenic geological processes: plutonism, volcanism, metamorphism.	W_01 W_03 W_04 U_03 K_03
3	Endogenic geological processes: diastrophism and its impact on engineering geological conditions.	W_01 W_03 W_04 U_03 K_02
4	Exogenous geological processes: weathering and its impact on engineering geological conditions.	W_01 W_03 W_04 U_03 K_02
5	Exogenous geological processes: mass movement and its impact on engineering geological conditions.	W_01 W_03 W_04 U_03 K_02
6	Exogenous geological processes: river activity (erosion, transport, accumulation). Engineering geological conditions of the area of the past river activity.	W_01 W_03 W_04 U_03 K_02
7	Exogenous geological processes: glacier activity (erosion, transport, accumulation). Engineering geological conditions of the area of the past glacier activity.	W_01 W_03 W_04 U_03 K_03
8	Exogenous geological processes: wind activity (erosion, transport, accumulation) and its impact on engineering geological conditions.	W_01 W_03 W_04 U_03 K_03

9	Formation of lake sediments. Engineering geological conditions of the area of occurrence of lake sediments.	W_01 W_03 W_04 U_03 K_03
10	Formation of sea sediments. Diagenesis.	W_01 W_03 W_04 U_03 K_02
11	Geological maps reading.	W_01 W_03 W_04 U_03 K_02
12	Selected methods of engineering geology research.	W_01 W_03 W_04 U_03 K_02
13	Impact of anthropogenic factors such as construction, underground and open-pit mining activities on engineering geological conditions.	W_01 W_03 W_04 U_03 K_02

## 2. Topics to be covered in the classes

No.	Topics	Module outcome code
1.	Identification and classification of rock-forming minerals with macroscopic methods.	W_02 K_01
2.	Identification and classification of igneous rocks.	W_01 W_02 U_01 U_03 K_01 K_02
3.	Identification and classification of sedimentary rocks.	W_01 W_02 U_01 U_03 K_01 K_02
4.	Identification and classification of metamorphic rocks.	W_01 W_02 U_01 U_03 K_01 K_02
5.	Reading of geological maps and cross sections.	W_01 U_01 U_02 U_03 K_01 K_02
6.	Creating simple geological cross section.	U_01

		U_02 U_03 K_01 K_02
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3. Topics to be covered in the projects

### Assessment methods

Module outcome code	Assessment methods <i>(Method of assessment; for module skills – reference to specific project, laboratory and similar tasks)</i>
W_01	An examination
W_02	A test and a report
W_03	An examination
W_04	An examination
U_01	A test
U_02	An assignment
U_03	A test
U_04	An examination
K_01	An assignment and a test
K_02	An assignment and a test
K_03	An assignment, a report, and a test

### C. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	Study time/ credits
1	Contact hours: participation in lectures	30
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	15
4	Contact hours: attendance at office hours (2-3 appointments per semester)	6
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	6
8		6
9	<b>Number of contact hours</b>	<b>63</b> <i>(total)</i>
10	<b>Number of ECTS credits for contact hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.5</b>
11	Private study hours: background reading for lectures	
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	10
14	Private study hours: preparation for laboratories	15
15	Private study hours: writing reports	23
16	Private study hours: preparation for a final test in laboratories	10
17	Private study hours: preparation of a project/a design specification	
18	Private study hours: preparation for an examination	5

19		
20	<b>Number of private study hours</b>	<b>63</b> <i>(total)</i>
21	<b>Number of ECTS credits for private study hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.5</b>
22	<b>Total study time</b>	<b>126</b>
23	<b>Total ECTS credits for the module</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>5</b>
24	<b>Number of practice-based hours</b> <i>Total practice-based hours</i>	<b>46</b>
25	<b>Number of ECTS credits for practice-based hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>1.8</b>