



Study programme:	Construction and Building Systems Engineering		Degree level: full-time programme:		Bachelor's degree	
Specialization			Diploma path:			
Module name:	Engineering geology and petrography					
Module type:	obligatory	Semester:	1	ECTS	3	Module ID: CBSE1107
No. of hrs in semester:	L - 15	C - 0	LC- 0	P- 0	SW- 15	S- 0
Prerequisites:	<i>Complete with prerequisites or "-"</i>		--			
Aims and objectives:	<i>Description of the assumed knowledge, skills and social competence the student should have acquired after the completion of the module:</i>		Gaining knowledge of geology and geomorphology. Learning about a variety of geological processes that shape the subsoil and affect its properties important for civil engineers. Acquiring knowledge about the origin and structure of various rocks and their practical recognition.			
Forms of teaching activities:	<i>lecture, specialization workshop</i>		Assessment:		<i>Evaluation must be relevant to the intended learning outcomes</i>	
			lecture – written test, specialization workshop: written and oral test - recognize rocks and minerals			
Module content:	<i>Complete with the module content: (max. 1000 characters)</i>		The importance of geology in the problems of building. Structure and stratigraphy of the Earth. Endogenous processes: earthquakes, volcanism, plutonism and metamorphism. Origin, structure and distribution of igneous and metamorphic rocks. Erosion sedimentation processes in different environments: rivers, sea, lake, wetland and aeolian processes. Origin and distribution of sedimentary rocks. Recognition of rocks and minerals. Glaciers and glacial processes. Polish glaciation. Groundwater. Basic issues of hydrogeology.			
Teaching methods:	lecture, specialization workshop, team-work					
Learning outcome	<i>Specify min. 4, max. 8 learning outcomes in the following order: knowledge – skills – competence. Each learning outcome must be verifiable</i>				<i>Reference to the programme learning outcomes</i>	
LO1	Student collects information in the field of stratigraphy and lithology				CBSE_W03	
LO2	Student learns about origin and structure of various rocks and the processes leading to their transformation				CBSE_W03	
LO3	Student gains knowledge to be better prepared to understand the issues of construction materials, soil mechanics and foundations				CBSE_W03, CBSE_W06, CBSE_U05, CBSE_K01	
LO4	Student describes the geological and geodynamic processes that shaped the subsoil and affect its properties				CBSE_W03, CBSE_W06, CBSE_U05, CBSE_K01	
LO5	Student explains the links of geology with the entirety of the relationship between the subsoil facility and engineering object				CBSE_W03, CBSE_W06, CBSE_U05, CBSE_K01	
LO6	Student can recognize rocks and minerals				CBSE_U06	
No. of learning outcome	Methods of assessing the learning outcome				Type of teaching activities (if more than one) during which the outcome is assessed	
LO1	written test				L	
LO2	written test				L	
LO3	written test and oral tests and preparation for specialization workshop				L	SW
LO4	written test				L	
LO5	written test				L	
LO6	checking student's knowledge by discussion					SW
	lecture attendance				15 x 1h	15
	participation in classes, laboratory classes, etc.				15 x1h	15

Student workload (in hours):	preparation for classes, laboratory classes, projects, seminars, etc.	15 x 1h	15
	working on projects, reports, etc.		
	participation in student-teacher sessions related to the classes/seminar/project		10
	implementation of project tasks		
	preparation for and participation in exams/tests		20
	preparation for specialization workshop		10
		TOTAL:	85
Quantitative indicators	Student workload – activities that require direct teacher participation: 15h + 15h + 10h = 40h	40	ECTS 1,5
	Student workload – practical activities: 15h + 15h + 10h + 10h = 50h	50	2
Basic references:	1. Blyth F.G.H., de Freitas M. H.: <i>A Geology for Engineers</i> . CRC Press, 7th ed. 336 p. 2. Hencher S.: <i>Practical Engineering Geology</i> . CRC Press, 2012, 448 p.		
Supplementary references:	3. Bowen R.: <i>Geology in engineering</i> . Elsevier Applied Science, 1984 . 4. Bell F. G.: <i>Engineering Geology and Construction</i> . CRC Press, 2004, 808 p.		
Unit:	Department/Division:	Division of Geotechnics	
Date of issuing the programme:	01.02.2017	Author of the programme:	Małgorzata Wysocka, MSc, Eng

L - lecture C - classes
SW - specialization workshop

LC - laboratory classes P-project
S - seminar