STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Fundamentals of Geology**		Code **1010101131010125119**
Field of study **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical) **general academic**	Year /Semester **2 / 3**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **15** Classes: **-** Laboratory: **15** Project/seminars: **-**		No. of credits **2**
Status of the course in the study program (Basic, major, other) **basic**	(university-wide, from another field) **university-wide**	
Education areas and fields of science and art **technical sciences**		ECTS distribution (number and %) **2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of geography, chemistry, physics, descriptive geometry and geodesy
2	**Skills**	Student knows: - fundamental rights occurring in nature - basic information about chemical compounds - the basics of mechanics - problems of geodesy and mapping
3	**Social competencies**	Student: - is able to work independently and to group work - is responsible for the results of his work - self expanding his knowledge

Assumptions and objectives of the course:

Achieving a basic level of geology knowledge

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Origin of rock-forming minerals, igneous, sedimentary and metamorphic rocks and their classification - [T1A_W04, T1A_W01]
2. Origin and characteristic of subsoil, evaluation of basic geotechnical parameters - [T1A_W04, T1A_W01]
3. Processes of deformation of filtration and mass base building - [T1A_W04, T1A_W01]

Skills:

1. Determination the suitability of different types of subsoil for investment purposes - [T1A_U06, T1A_U08, T1A_0U13, T1A_U12, T1A_U14]
2. Recognizing and naming the basic igneous, sedimentary and metamorphic rocks - [T1AU_02, T1A_U03, T!A_U04]
3. Description of the rocks according to the scheme: structure, texture, mineral composition, the name of rock - [T1AU_01, T1A_U03]

Social competencies:

1. Student is responsible for the results of his work - [T1A_K03, T1A_K02, T1A_K04, T1K06]
2. Student is aware of the need to improve his professional qualifications - [T1A_K03]
3. . Student understands the need for consultation and collaboration between design engineer and geologist during the task realization - [T1A_K03, T1A_K04, T1A_K06]

Assessment methods of study outcomes

Written test of the lecture material (test).

Practical identification of minerals and rocks (laboratory).

Course description

1. Exogenous processes: physical and chemical weathering
2. Erosion and accumulation activity of glaciers
3. Bases of hydrogeology (origin of water resources on the Earth, the water in unsaturated and saturated zone, groundwater flow), water in the ground and building ground filter deformation
4. The processes of erosion and accumulation caused by the effect of surface water flowing
5. The processes of erosion and accumulation caused by the effect of surface water bodies,
6. The processes of erosion and accumulation caused by the wind activity
7. Surface mass movements, slope stability criteria,
8. Geotechnical classification of building subsoil
9. Methods and ways to study the geotechnical parameters of subsoil
10. Methodology and scope of preparing the geological and geotechnical-engineering documentation
11. Classification of igneous rocks and their macroscopic description
12. Classification, identification and description of the main sedimentary rocks
13. Metamorphism: classification and recognition of basic metamorphic rocks
14. The rocks as a building subsoil, structural bonding of soils, their sensitivity to changes in the phase composition, the review of specific soils

Basic bibliography:

1. Książkiewicz M., Geologia dynamiczna (Wydaw. Geol., Warszawa 1979)
2. Jaroszewski W. (red.), Przewodnik do ćwiczeń z geologii dynamicznej (Wyd. PAE, Warszawa 1999)
3. Stankowski W., Wstęp do geologii kenozoiku (Wydaw. Nauk. UAM, 1996)
4. Malinowski, Glazer Z., Geologia i geotechnika dla inżynierów budownictwa (PWN, 1991)
5. Pisarczyk R., Gruntoznawstwo inżynierskie (PWN, 2001)
6. Jeż J., Przyrodnicze aspekty bezpiecznego budownictwa (Wydaw. PP, 1995)

Additional bibliography:

1. Stanley S. M., Historia Ziemi (PWN 2001)
2. Van Andel T. H., Nowe spojrzenie na starą planetę. Zmienne oblicze Ziemi (PWN 1997)
3. Mizerski W., Geologia dynamiczna (PWN 2010)
4. Czubla P., Mizerski W., Świerczewska-Gładysz E., Przewodnik do ćwiczeń z geologii (wydanie II), (PWN 2009)
5. Jeż J., Gruntoznawstwo budowlane (Wydaw. PP, 2004)
6. Jeż J., Biogeotechnika (Wydaw. PP, 2008)

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	15
2. Participation in laboratory exercises	15
3. Preparing to the laboratory exercises	5
4. Participation in the consultation	3
5. Preparing to the final test in the field of laboratory exercises	5
6. Preparing to the final test in the field of lectures	7

Student's workload

Source of workload	hours	ECTS
Total workload	50	2

Contact hours	33	2
Practical activities	23	1