COURSE DESCRIPTION CARD - SYLLABUS

Course name
Applied geology [S1TOZ1>GS]

Course

Field of study
Circular System Technologies

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of geology. Student is able to search for information in scientific literature, databases and other properly chosen sources. Student is able to laboratory work and operate the scientific equipment. Understanding the need for further education and improve their professional competences.

Course objective

Acquiring knowledge of the structure of the Earth"s lithosphere, the distribution of minerals and natural resources.

Course-related learning outcomes

Knowledge:
k_w08 - has knowledge of the negative impact of manufacturing and processing technologies on the natural environment.
k_w10 - has knowledge of raw materials, products and processes used in closed-loop technologies.
k_w15 - has knowledge in the field of technologies based on renewable materials (so-called green materials).

Skills:
k_u01 - the graduate acquires information from literature, databases and other sources related to chemical sciences, integrates, interprets and draws conclusions and formulates opinions.
k_u05 - correctly uses in the discussion and properly uses nomenclature and terminology in the field of circular economy, chemistry, technology and chemical engineering, environmental protection and related disciplines, also in a foreign language.

Social competences:
k_k05 - objectively assesses the level of their knowledge and skills, understands the importance of improving professional and personal competences adequately to the changing social conditions and the progress of science.
k_k07 - demonstrates care and full responsibility for the specialist equipment entrusted to him for research.
k_k10 - is aware of the negative impact of human activity on the state of the environment and actively prevents its degradation.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
1. Rating of written exam.

Programme content

Introduction to the participation of chemical transformation processes in global processes.
Formation of elements and minerals.
Stability conditions for minerals and multiphase equilibria, stability fields in PT diagrams.
Introduction to the geochemistry of stable isotopes.
Metasomatic processes and reactions.
Geochemistry of mineral and rock-forming processes in igneous systems.
Diffusion and advection in diagenesis processes, in hydrothermal activity and in metamorphism.
Formation of nodules, cementation, migration.
Selected structures and textures of igneous and metamorphic rocks resulting from the competitiveness of the reaction.
Geochemistry of the formation of selected minerals of gemmological importance.
Resources of minerals in the Earth"s crust.
Fundamentals of crystallochemistry. Identification analysis of minerals.

Teaching methods

Lectures.

Bibliography

Basic
1. Migaszewski Z., Gałuszka A., Podstawy geochemii środowiska, Warszawa 2007.
2. Mizerski W., Geologia Polski, Warszawa 2009.
Additional
1. Kabata-Pendias A., Pendias H., Biogeochemia pierwiastków śladowych, PWN, Warszawa 1999.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	38	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	12	0,50