University of Gdańsk

Subject card

Subject name and code	Geophysics and Geochemistry - lecture, PG_00194260		
Field of study	Geography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Maurycy Żarczyński	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	20.0	0.0	0.0	0.0	0.0	20

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	20	2.0	28.0	50

Subject objectives

Overview of fundamental processes and phenomena occurring in the Earth's natural environment related to geophysical and geochemical issues. Presentation of the laws governing the circulation and transformation of energy and matter in nature, as well as the physicochemical properties and processes shaping the structure of the Earth as a whole and as an element of the Universe.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOGRL3-W02] knows and understands key concepts and theories in geography, as well as advanced processes and phenomena related to spatial diversity and the distribution of processes and phenomena on the Earth's surface at various spatial scales, particularly in Poland	Defines key concepts and describes geophysical and geochemical processes shaping the Earth's environment.	[SW4] test/exam - oral or written
[GEOGRL3-W04] has advanced knowledge of the Earth's geographical environment, understood as a unified system of interconnected and interacting components; its diversity, functioning, and dynamics of change, including the interaction of environmental components in the area of the South Baltic Coast and Lake District	Explains relationships between components of the natural environment in the context of geophysical and geochemical processes.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td colspan="3">• The Standard Model of elementary particles fundamental laws, energy and matter;
• Origin and evolution of the Universe, galaxies and stars;
• The Solar System formation, structure and the influence of the Sun on Earth;
• Origin and internal structure of the Earth;
• Natural and artificial radioactivity, isotopes, and dating of objects and phenomena;
• Gravitational and geomagnetic field of the Earth;
• Atmospheric physics structure, layers, electrical and optical phenomena;
• States of matter, phase transitions and the cycling of elements in nature.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Written test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">• Fedorowicz S., 2008, Geofizyka i geochemia. Skrypt dla studentów kierunku geografii, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk
• Migaszewski Z. M., Gałuszka A., 2016, Geochemia środowiska, Wydawnictwo Naukowe PWN, Warszawa
• Mietelski J., 2001, Astronomia w geografii, PWN, Warszawa</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">• Pokojska U., Bednarek R. (red.), 2012, Geochemia krajobrazu, Wyd. Nauk. UMK, Toruń
• Czechowski L., 1994, Tektonika płyt i konwekcja w płaszczu Ziemi, Wydawnictwo Naukowe PWN, Warszawa
• Stodółkiewicz J.S., 1982, Astrofizyka ogólna z elementami geofizyki, PWN, Warszawa</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">• Which of the following bosons is the carrier of the electromagnetic interaction?
• Describe the main stages of the evolution of a Sun-type star.
• List and briefly characterise the main layers of the Earth's internal structure.
• Describe the principle of radiocarbon dating and its main limitation.
• The tropopause is the boundary between.
• Explain how the Earth's geomagnetic field influences other components of the natural environment.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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