University of Gdańsk

Subject card

Subject name and code	Introduction to volcanology, PG_00193011		
Field of study	Geology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	English
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Dominik Pałgan	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

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	30	1.0	19.0	50

Subject objectives

To learn and understand the basic geological processes associated with volcanic activity around the world. Particular attention will be given to submarine volcanism in different environments (e.g. spreading zones including back-arc spreading).

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	knows and identifies volcanic, petrographic and structural objects using appropriate methods used in volcanology.	[SW4] test/exam - oral or written
[GEOLL3_W01] knows and understands the basic natural phenomena and explains their course in relation to geological processes	knows and understands the basic natural phenomena and explains them in relation to the geological processes taking place in volcanic areas around the world.	[SW4] test/exam - oral or written
[GEOLL3_W05] knows the structure and geological development of selected regions in Poland and in the world	knows the structure and geological development of selected volcanic areas in the world, including on the ocean floor.	[SW4] test/exam - oral or written
[GEOLL3_W04] knows and understands phenomena and processes occurring in the past and today in the interior of the Earth and on its surface, defines the methods of how to study them	knows and understands phenomena and processes occurring nowadays in the Earth's interior and on its surface within volcanically active areas, defining the methods used to study them.	[SW4] test/exam - oral or written

Subject contents	History of volcanology and basic definitions. Sources and transport of magma. Types of volcanoeas and volcanic eruptions. Effusive and explosive volcanism. Seafloor volcanism. Volcanism and climate. Geohazards arising from volcanic activity. Iceland - a natural laboratory for volcanology
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test	51.0%	100.0%

Recommended reading	Basic literature	1. Sigurdsson, H. [Ed.], 1999, Encyclopedia of Volcanoes, Academic Press 2. Gill, R., 2010, Igneous Rocks and Processes: a practical guide: Wiley-Blackwell, Chichester, UK 3. Zobin, V.M., 2003, Introduction to Volcanic Seismology, Elsevier, ISBN: 0-444-51340 X 4. Schmincke, H.U., 2004, Volcanism, Springer-Verlag, ISBN: 3-540-43650-2 3. Rubin, K.H., 2014, Mid-Ocean Ridge Magmatism and Volcanism, In: Harff, J., Meschede, M., Petersen, S., and Thiede, J. [Eds.], Encyclopedia of Marine Geosciences, p.1-21, Springer-Verlag Berlin Heidelberg. DOI: 10.1007/978-94-007-6644-0_28-3

	Supplementary literature	1. Sæmundsson, K., 1979, Outline of the geology of Iceland: Jökull, v. 29, s. 728. 2. Thordarson, T., 2012; Outline of Geology of Iceland, Chapman Conference 2012. 3. Martinez, F., oraz Hey, R., 2017, Propagating buoyant mantle upwelling on the Reykjanes Ridge: Earth and Planetary Science Letters, v. 457, p. 1022, doi: 10.1016/j.epsl.2016.09.057 4. Yeo, I.A., Devey, C.W., LeBas, T.P., Augustin, N., oraz Steinführer, A., 2016, Segment-scale volcanic episodicity: evidence from the North Kolbeinsey Ridge, Atlantic: Earth Planet. Sci. Lett., v. 439, p. 8187, doi:https://doi.org/10.1016/j.epsl.2016.01.029. 5. Rubin, K.H., Soule, S.A., Chadwick, Jr., W.W, Fornari, D.J., Clague, D.A., Embley, R.W., Baker, E.T., Perfit, M.R., Caress, D.W., and Dziak, R.P., 2012, Volcanic Eruptions in the Deep Sea: Oceanography, v. 25, p. 142157, doi: 10.5670/oceanog.2012.12 6. Yeo, I.A., and Searle, R.C., 2013, High-resolution Remotely Operated Vehicle (ROV) mapping of a slow-spreading ridge: Mid-Atlantic Ridge 45°N: Geochemistry, Geophysics, Geosystems, v. 14, p. 16931702, doi: 10.1002/ggge.20082. 7. Yeo, I.A, Searle, R.C., Achenbach, K.L., Le Bas, T.P., and Murton, B.J., 2012, Eruptive hummocks: Building blocks of the upper ocean crust: Geology, v. 40, p. 9194, doi: 10.1130/G31892.1.
	eResources addresses	
Example issues/ example questions/ tasks being completed	Seafloor volcanism. Volcanism and climate.	
Work placement	Not applicable	

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