

**Subject card**

Subject name and code	, PG_00120931						
Field of study	Geology						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2026/2027		
Education level	Bachelor's studies	Subject group			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		0.0		0.0	30
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_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_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_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		
	[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		

Subject contents	<p>History of volcanology and basic definitions.</p> <p>Sources and transport of magma.</p> <p>Types of volcanoes and volcanic eruptions.</p> <p>Effusive and explosive volcanism.</p> <p>Seafloor volcanism.</p> <p>Volcanism and climate.</p> <p>Geohazards arising from volcanic activity.</p> <p>Iceland - a natural laboratory for volcanology</p>								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 869 794 898">Subject passing criteria</th> <th data-bbox="799 869 1137 898">Passing threshold</th> <th data-bbox="1142 869 1485 898">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 904 794 931">written test</td> <td data-bbox="799 904 1137 931">51.0%</td> <td data-bbox="1142 904 1485 931">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	written test	51.0%	100.0%
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written test	51.0%	100.0%							
Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Sigurdsson, H. [Ed.], 1999, Encyclopedia of Volcanoes, Academic Press</li> <li>2. Gill, R., 2010, Igneous Rocks and Processes: a practical guide: Wiley-Blackwell, Chichester, UK</li> <li>3. Zobin, V.M., 2003, Introduction to Volcanic Seismology, Elsevier, ISBN: 0-444-51340 X</li> <li>4. Schmincke, H.U., 2004, Volcanism, Springer-Verlag, ISBN: 3-540-43650-2</li> <li>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</li> </ol>							

	Supplementary literature	<p>1. Sæmundsson, K., 1979, Outline of the geology of Iceland: Jökull, v. 29, s. 728.</p> <p>2. Thordarson, T., 2012; Outline of Geology of Iceland, Chapman Conference 2012.</p> <p>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</p> <p>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.</p> <p>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</p> <p>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.</p> <p>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.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Seafloor volcanism.</p> <p>Volcanism and climate.</p>	
Work placement	Not applicable	

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