

Subject card

Subject name and code	Field classes - Regional geology of the Southern Poland II, PG_00199144						
Field of study	Geology						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			2.0		
Learning profile	academic	Assessment form			credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Marcinowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	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		5.0		15.0	50
Subject objectives	<p>The field classes are designed to familiarize students with the geological structure of selected units of the Sudetes within the context of the regional geology of the Lower Silesian Block and the Variscan orogeny of Europe. At selected field outcrops, students will learn about various lithological rock types and the geological processes leading to their formation. Based on field observations, they will reconstruct the geological history of the Sudetes.</p> <p>The study addresses issues related to Paleozoic tectonic structures, the development of the Variscan orogeny and its consequences in the Sudetes and the Pre-Sudetic Block, Permian sedimentation in the Upper Nysa Trough, and volcanic activity.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GEOLL3_K05] is willing to comply with the principles of occupational safety and health, takes care of specialized equipment entrusted to them, is aware of the risk connected with the performed work	follows the health and safety rules in effect at mining sites, exercises the necessary caution in open-pit areas, and properly maintains the equipment entrusted to them	[SK1] oral statement/conversation/discussion [SK6] demonstration of practical skills [SK8] observation of student's independent or team work
	[GEOLL3_K01] is willing to plan and implement, individually or as a team, the next stages of the entrusted task, take responsibility for its results, effectively cooperate in the team by performing various roles in it	plans and conducts field research, either individually or as part of a team, and is able to take responsibility for the results	[SK1] oral statement/conversation/discussion [SK4] test/exam - oral or written [SK5] implementation of a problem task [SK6] demonstration of practical skills [SK8] observation of student's independent or team work
	[GEOLL3_U05] can reconstruct the history of geological development of selected regions in Poland and in the world on the basis of maps, cross-sections and exposures in the field	is able to reconstruct the geological history of a selected region of the Sudetes, based on observations of outcrops, in the context of the Variscan orogeny in Europe	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements	is able to properly plan and document a geological outcrop, including the identification of the minerals and rocks present in it	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GEOLL3_W05] knows the structure and geological development of selected regions in Poland and in the world	is familiar with the geological structure of the Sudetes in the context of the geological structure of Poland and the Variscan orogeny in Europe	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[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 the impact of mineralization processes on the formation of specific lithological rock types	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[GEOLL3_U10] is able to work individually and cooperate in laboratory and field groups performing various functions in them and performing various tasks	is able to work independently and take on various roles within a group during fieldwork activities	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GEOLL3_W01] has an advanced knowledge and understanding of the natural processes and phenomena occurring within the Earth system and explains their mechanisms in relation to geological processes	knows and understands the geological phenomena and processes that lead to the formation of various types of rocks	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW5] implementation of a problem task
	[GEOLL3_U06] is able to identify geological objects and combine them with geological processes and anthropogenic environmental transformations	can identify rocks, minerals, and fossils based on their origin	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	knows and identifies, using established methods, the rocks and minerals found in the Central Sudetes	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion

Subject contents	<p>1. To introduce the student to the geological structure of selected structural units of the Sudetes Mountains. 2. Making geological documentation using simple field methods. 3. Identification of rocks, minerals and fossils. 4. Identification of geological structures. 5. Reconstruction of geological processes on the basis of field and literature information. 6. Learning the geologist's field workshop and geological problem thinking.</p> <p>Topics for field classes</p> <p>1. Magmatic processes, chemical differentiation of magma Strzelin Massif (Gęsiniec) 2. Phenomena of regional metamorphism the metamorphic cover of the Strzelin Massif (Jęglowa, Skalice) 3. The Sudeten Ophiolite the Braszowice-Brzeźnica Massif 4. The Geological Structure and Tectono-Metamorphic History of the Owl Mountains Massif 5. Paleozoic Sedimentation of the Upper Nysa Trough the Idzikowskie Layer 6. The Atlantis Volcanic Province Tertiary volcanism 7. Dislocation metamorphism Niemcza Area</p>														
Prerequisites and co-requisites															
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="454 669 794 698">Subject passing criteria</th> <th data-bbox="799 669 1139 698">Passing threshold</th> <th data-bbox="1144 669 1482 698">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="454 705 794 734">written/oral test</td> <td data-bbox="799 705 1139 734">51.0%</td> <td data-bbox="1144 705 1482 734">60.0%</td> </tr> <tr> <td data-bbox="454 741 794 770">field work</td> <td data-bbox="799 741 1139 770">51.0%</td> <td data-bbox="1144 741 1482 770">20.0%</td> </tr> <tr> <td data-bbox="454 777 794 806">problem task, text development</td> <td data-bbox="799 777 1139 806">51.0%</td> <td data-bbox="1144 777 1482 806">20.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	written/oral test	51.0%	60.0%	field work	51.0%	20.0%	problem task, text development	51.0%	20.0%
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written/oral test	51.0%	60.0%													
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Recommended reading	Basic literature	Bibliography
		<p>Awdankiewicz, M., 1999. Volcanism in a late Variscan intramontane trough: The petrology and geochemistry of the arboniferous and Permian volcanic rocks of the Intra-Sudetic Basin, SW Poland. <i>Geologia Sudetica</i> 32, 83111.</p> <p>Awdankiewicz, M., Kurowski, L., Mastalerz, K., Raczyński, P., 2003. The Intra-Sudetic Basin a Record of Sedimentary and Volcanic Processes in Late to Post-Orogenic Tectonic Setting. <i>GeoLines</i> 16, 165183.</p> <p>Badura J., Rauch M. 2014. Tectonics of the Upper Nysa Kłodzka Graben, the Sudetes. <i>Geologia Sudetica</i>, 42, 137-148</p> <p>Badura J., Rauch M. 2014. The CETeG 2014 excursion to the Upper Nysa Kłodzka Graben, the Sudetes: morphotectonics and tectonics. <i>Geologia Sudetica</i>, 42, 161-166</p> <p>Blecha M., Burliga S., Lojka R., Martinek K., Wojewoda J. 2008. Osady permskie basenu śródsudeckiego. W: J. Wojewoda (red.), <i>Baseny Śródgórskie: Kontekst Regionalny Środowisk i Procesów Sedymentacji</i>. 3 Polska Konferencja Sedymentologiczna (POKOS 3), 15-21.09.2008, Kudowa Zdrój. Materiały Konferencyjne, wycieczka B. WIND, Wrocław, 61-83</p> <p>Chopin, F., Schulmann, K., Skrzypek, E., Lehmann, J., Dujardin, J.R., Martelat, J.E., Lexa, O., Corsini, M., Edel, J.B., Štípská, P., Pitra, P., 2012a. Crustal influx, indentation, ductile thinning and gravity redistribution in a continental wedge: Building a Moldanubian mantled gneiss dome with underthrust Saxothuringian material (European Variscan belt). <i>Tectonics</i> 31, 127. https://doi.org/10.1029/2011TC002951</p> <p>Chopin, F., Schulmann, K., Štípská, P., Martelat, J.E., Pitra, P., Lexa, O., Petri, B., 2012b. Microstructural and metamorphic evolution of a high-pressure granitic orthogneiss during continental subduction (OrlicaŚnieżnik dome, Bohemian Massif). <i>Journal of Metamorphic Geology</i> 30, 347376. https://doi.org/10.1111/j.1525-1314.2011.00970.x</p> <p>Cwojdzński S., Żelaźniewicz A., 1995. Podłoże krystaliczne bloku przedsudeckiego, <i>Przewodnik LXVI Zjazdu PTG</i>: 11-28.</p> <p>Cymerman Z., 2004. Mapa tektoniczna Sudetów i Bloku Przedsudeckiego. Państwowy Instytut Geologiczny.</p> <p>Domańska-Siuda, J., 2007. The granitoid Variscan Strzegom-Sobótka massif. <i>Granitoids in Poland</i>, AM Monograph No. 1 179199.</p> <p>Dubińska E., Gunia P., 1997. The Sudetic ophiolite: current view on its geodynamic model. <i>Geol. Quart.</i>, 41: 1-20.</p> <p>Dubińska E., Żelaźniewicz A., Nejbert K., Bylina P., 1999. Ultramafic rocks from migmatic gneisses of the Góry Sowie block, Sudetes. <i>Polskie Towarzystwo Mineralogiczne - Prace Specjalne</i>, 14: 76-78.</p> <p>Jokubauskas P., Bagiński B., Ray Macdonald R., Krzemińska E., 2017: Multiphase magmatic activity in the Variscan KłodzkoZłoty Stok intrusion, Polish Sudetes: evidence from SHRIMP UPb zircon ages. <i>International Journal of Earth Sciences</i>, https://doi.org/10.1007/s00531-017-1562-x</p> <p>Krzemińska E., Awdankiewicz M., 2011. Historia geologiczna aktywności wulkanicznej na obszarze Polski. <i>Kosmos</i>, t. 60, nr 34: 293 293.</p> <p>Jastrzębski, M., Budzyń, B., Żelaźniewicz, A., Konečný, P., Sláma, J., Kozub-Budzyń, G.A., Skrzypek, E., Jaźwa, A., 2021. Eo-Variscan metamorphism in the Bohemian Massif: Thermodynamic modelling and monazite geochronology of gneisses and granulites of the Góry Sowie Massif, SW Poland. <i>Journal of Metamorphic Geology</i> 129. https://doi.org/10.1111/jmg.12589</p> <p>Mastej W., Barmuta J., Bartuś T., Łodziński M., 2019: <i>Geostrada Sudecka - Przewodnik geologiczny Tomu III</i>, Wydawnictwa AGH</p> <p>Mazur S., 2003. Ewolucja strukturalna metamorfizmu kłodzkiego jej znaczenie dla tektoniki piętra waryscyjskiego Sudetów. <i>Prace geologiczne mineralogiczne LXXIV</i>: 1-197. Uniwersytet Wrocławski.</p> <p>Mazur S., Aleksandrowski P., Kryza R., Oberc-Dziedzic K., 2006. The Variscan Orogen in Poland. <i>Geological Quarterly</i> 50, 1: 89-118.</p> <p>Mazur, S., Aleksandrowski, P., Szczepański, J., 2010. Zarys budowy i ewolucji tektonicznej waryscyjskiej struktury Sudetów. <i>Przegląd Geologiczny</i> 58, 133145.</p> <p>Oberc-Dziedzic, T., Kryza, R., Pin, C., 2015. Last stage of variscan</p>

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	Supplementary literature	<p>Awdankiewicz, M., 2005. Reconstructing an eroded scoria cone: the Miocene Sośnica Hill volcano (Lower Silesia, SW Poland). <i>Geological Quarterly</i> 49, 439448.</p> <p>Borzęcki R., Marek A. 2013. Geoturystyczne walory hałdy dawnej kopalni węgla Nowa Ruda. W: Zagożdżon P.P., Madziarz M. (red.), <i>Dzieje Górnictwa Element Europejskiego Dziedzictwa Kultury</i>. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, t. 5, 15-25</p> <p>Domańska-Siuda, J., Bagiński, B., 2019. Magma mingling textures in granitic rocks of the eastern part of the Strzegom-Sobótka massif (Polish Sudetes). <i>Acta Geologica Polonica</i> 69, 143160. https://doi.org/10.24425/agp.2019.126437</p> <p>Gil, G., Bagiński, B., Gunia, P., Madej, S., Sachanbiński, M., Jokubauskas, P., Belka, Z., 2020. Comparative Fe and Sr isotope study of nephrite deposits hosted in dolomitic marbles and serpentinites from the Sudetes, SW Poland: Implications for Fe-As-Au-bearing skarn formation and post-obduction evolution of the oceanic lithosphere. <i>Ore Geology Reviews</i> 118, 103335. https://doi.org/10.1016/j.oregeorev.2020.103335</p> <p>Kozłowski, S., 1958. Wulkanizm permski w rejonie Głuszycy i Świerków na Dolnym Śląsku. <i>Annales de la Societe Geologique de Pologne</i> 28, 561</p> <p>Mazur, S., Turniak, K., Szczepański, J., McNaughton, N.J., 2015. Vestiges of Saxothuringian crust in the Central Sudetes, Bohemian Massif: Zircon evidence of a recycled subducted slab provenance. <i>Gondwana Research</i> 27, 825839. https://doi.org/10.1016/j.gr.2013.11.005</p> <p>Nance, R.D., Gutiérrez-Alonso, G., Keppie, J.D., Linnemann, U., Murphy, J.B., Quesada, C., Strachan, R.A., Woodcock, N.H., 2012. A brief history of the Rheic Ocean. <i>Geoscience Frontiers</i> 3, 125135. https://doi.org/10.1016/j.gsf.2011.11.008</p> <p>Nance, R.D., Gutiérrez-Alonso, G., Keppie, J.D., Linnemann, U., Murphy, J.B., Quesada, C., Strachan, R.A., Woodcock, N.H., 2010. Evolution of the Rheic Ocean. <i>Gondwana Research</i> 17, 194222. https://doi.org/10.1016/j.gr.2009.08.001</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	Magmatic processes, chemical differentiation of magma Strzelin Massif (Gęsinięc) Phenomena of regional metamorphism the metamorphic cover of the Strzelin Massif (Jęglowa, Skalice)	
Work placement	Not applicable	

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