University of Gdańsk

Subject card

Subject name and code	Field classes - Regional geology of the Southern Poland I, PG_00199149		
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	Laboratory of Marine Geology -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector		
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

The field course in the Sudetes are devoted to the geological structure of the Central Sudetes in context of geological history of the Lower Silesia block.The specific topics of the classes are selected on a case-by-case basis, depending on the availability of exposures and access to selected mining facilities.
The issues addressed include Paleozoic tectonic structures, the development of the Variscan orogenesis in the Sudetes, and the formation and filling with sediments of the mid-Sudeten depression.
They learn about the different lithological varieties of magmatic, metamorphic and sedimentary rocks, learn about the processes leading to their formation, while taking into account the dissimilarity of the different geological units of the Sudetes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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	Can reconstruct the history of geological development of a selected region of the Sudetes, using knowledge of field geological sites and literature materials	[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_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	Applies occupational health and safety rules applicable to mining plants and geological sites. Is aware of the hazards in them. Takes proper care of the field equipment he owns.	[SK1] oral statement/conversation/ discussion [SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[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 individually and in a group during field activities, performing various functions.	[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] knows and understands the basic natural phenomena and explains their course in relation to geological processes	Knows and understands the basic rock-forming processes, explains their course.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	Knows the rocks and minerals in the geological sites visited, correctly identifies them using known methods.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[GEOLL3_U06] is able to identify geological objects and combine them with geological processes and anthropogenic environmental transformations	Can describe geological sites, interpret the geological and anthropogenic processes visible in them.	[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_W05] knows the structure and geological development of selected regions in Poland and in the world	Knows the geological structure of the Sudetes and its development against the background of the geological structure of the Variscan Orogen of 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 processes leading to the formation of certain types of rocks.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[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 plan appropriate researches to identify minerals, rocks and describe a geological site.	[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_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 work in geological sites with full responsibility for its progress.	[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

Subject contents	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. Selected topics for classes: 1. Sudetes ophiolite 2. Granitoid massifs and their metamorphic covers 3. Geological structure and tectonometamorphic history of the Lądek-Śnieżnik massif 4. Geological structure and tectonometamorphic history of the Sowie Mountains massif 5. Volcanic phenomena 6. Paleozoic sedimentation of the Sudetes (selected sites) 7. Mesozoic sedimentation of the Sudetes (selected sites)
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
problem task, text development	51.0%	20.0%
wrtten/oral test	51.0%	60.0%
field work	51.0%	20.0%

Recommended reading	Basic literature	Awdankiewicz, M., 1999. Volcanism in a late Variscan intramontane trough: The petrology and geochemistry of the Carboniferous and Permian volcanic rocks of the Intra-Sudetic Basin, SW Poland. Geologia Sudetica 32, 83111. 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. GeoLines 16, 165183. Badura J., Rauch M. 2014. Tectonics of the Upper Nysa Kłodzka Graben, the Sudetes. Geologia Sudetica, 42, 137-148 Badura J., Rauch M. 2014. The CETeG 2014 excursion to the Upper Nysa Kłodzka Graben, the Sudetes: morphotectonics and tectonics. Geologia Sudetica, 42, 161-166 Blecha M., Burliga S., Lojka R., Martinek K., Wojewoda J. 2008. Osady permskie basenu śródsudeckiego. W: J. Wojewoda (red.), Baseny Śródgórskie: Kontekst Regionalny Środowisk i Procesów Sedymentacji. 3 Polska Konferencja Sedymentologiczna (POKOS 3), 15-21.09.2008, Kudowa Zdrój. Materiały Konferencyjne, wycieczka B. WIND, Wrocław, 61-83 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). Tectonics 31, 127. https://doi.org/10.1029/2011TC002951 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 (Orlica-Śnieznik dome, Bohemian Massif). Journal of Metamorphic Geology 30, 347376. https://doi.org/10.1111/j.1525-1314.2011.00970.x Cwojdziński S., Żelaźniewicz A., 1995. Podłoże krystaliczne bloku przedsudeckiego, Przewodnik LXVI Zjazdu PTG: 11-28. Cymerman Z., 2004. Mapa tektoniczna Sudetów i Bloku Przedsudeckiego. Państwowy Instytut Geologiczny. Domańska-Siuda, J., 2007. The granitoid Variscan Strzegom-Sobótka massif. Granitoids in Poland, AM Monograph No. 1 179199. Dubińska E., Gunia P., 1997. The Sudetic ophiolite: current view on its geodynamic model. Geol. Quart., 41: 1-20. Dubińska E., Żelaźniewicz A., Nejbert K., Bylina P., 1999. Ultramafic rocks from migmatic gneisses of the Góry Sowie block, Sudetes. Polskie Towarzystwo Mineralogiczne - Prace Specjalne, 14: 76-78. Kształcenia 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. International Journal of Earth Sciences, https://doi.org/10.1007/s00531-017-1562-x Krzemińska E., Awdankiewicz M., 2011. Historia geologiczna aktywności wulkanicznej na obszarze Polski. Kosmos, t. 60, nr 34: 293 293.

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. Journal of Metamorphic Geology 129. https://doi.org/10.1111/jmg.12589

Mastej W., Barmuta J., Bartuś T., Łodziński M., 2019: Geostrada Sudecka - Przewodnik geologiczny Tomy III, Wydawnictwa AGH

Mazur S., 2003. Ewolucja strukturalna metamorfizmu kłodzkiego jej znaczenie dla tektoniki piętra waryscyjskiego Sudetów. Prace geologiczne mineralogiczne LXXIV: 1-197. Uniwersytet Wrocławski.

Mazur S., Aleksandrowski P., Kryza R., Oberc-Dziedzic K., 2006. The Variscan Orogen in Poland. Geological Quaterly 50, 1: 89-118.

Mazur, S., Aleksandrowski, P., Szczepański, J., 2010. Zarys budowy i ewolucji tektonicznej waryscyjskiej struktury Sudetów. Przeglad Geologiczny 58, 133145.

Oberc-Dziedzic, T., Kryza, R., Pin, C., 2015. Last stage of variscan granitoid magmatism in the strzelin massif (SW Poland): Petrology and age of the biotite-muscovite granites. Geological Quarterly 59, 718737. https://doi.org/10.7306/gq.1248

Oberc-Dziedzic, T., Kryza, R., Pin, C., Madej, S., 2013. Variscan granitoid plutonism in the Strzelin Massif (SW Poland): Petrology and age of the composite Strzelin granite intrusion. Geological Quarterly 57, 269288. https://doi.org/10.7306/gq.1083

Schulmann, K., Konopásek, J., Janoušek, V., Lexa, O., Lardeaux, J.M., Edel, J.B., Štípská, P., Ulrich, S., 2009. An Andean type Palaeozoic convergence in the Bohemian Massif. Comptes Rendus - Geoscience 341, 266286. https://doi.org/10.1016/j.crte.2008.12.006

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Stupnicka E., Stempień-Sałek M., 2016. Podręcznik akademicki Geologia regionalna Polski. Wydawnictwa UW.

Kryza R., Muszer J., Haydukiewicz J., August C., Jurasik M., Rodionov N. 2011. A SIMS zircon age for a biostratigraphically dated Upper Visean (Asbian) bentonite in the Central-European Variscides (Bardo Unit, Polish Sudetes). International Journal of Earth Sciences (Geologische Rundschau), 100, 12271235

Szuszkiewicz, A., Szełeg, E., Pieczka, A., Ilnicki, S., Nejbert, K., Turniak, K., Banach, M., Łodziński, M., Rózniak, R., Michałowski, P., 2013. The Julianna pegmatite vein system at the Piława Górna Mine, Góry Sowie Block, SW Poland - Preliminary data on geology and descriptive mineralogy. Geological Quarterly 57, 467484. https://doi.org/10.7306/gq.1097

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	Supplementary literature	Awdankiewicz, M., 2005. Reconstructing an eroded scoria cone: the Miocene Sośnica Hill volcano (Lower Silesia, SW Poland). Geological Quarterly 49, 439448. Borzęcki R., Marek A. 2013. Geoturystyczne walory hałdy dawnej kopalni węgla Nowa Ruda. W: Zagożdżon P.P., Madziarz M. (red.), Dzieje Górnictwa Element Europejskiego Dziedzictwa Kultury. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, t. 5, 15-25 Domańska-Siuda, J., Bagiński, B., 2019. Magma mingling textures in granitic rocks of the eastern part of the Strzegom-Sobótka massif (Polish Sudetes). Acta Geologica Polonica 69, 143160. https://doi.org/10.24425/agp.2019.126437 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. Ore Geology Reviews 118, 103335. https://doi.org/10.1016/j.oregeorev.2020.103335 Kozłowski, S., 1958. Wulkanizm permski w rejonie Głuszycy i Świerków na Dolnym Śląsku. Annales de la Societe Geologique de Pologne 28, 561 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. Gondwana Research 27, 825839. https://doi.org/10.1016/j.gr.2013.11.005 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. Geoscience Frontiers 3, 125135. https://doi.org/10.1016/j.gsf.2011.11.008 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. Gondwana Research 17, 194222. https://doi.org/10.1016/j.gr.2009.08.001
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Granitoid massifs and their metamorphic covers (Kudowa Massif, Kłodzko-Złtostocki Massif) 2. Orlica-Śnieżnik Dome 2. Sudetes Ofiolite (geological sites in Niemcza Zone, Nowa Ruda, Bożków Mały) 3. Gneiss of the Sowie Massif (Quarry in Piława Górna) 4. Lower Silesian Coal Basin (Nowa Ruda) 5. Intrasudetic Basin (Stołowe Muntains, thrust sandstones) 6. Paleozoic of the Bardzkie Mountains (Żdanów Srebrna Gra) 7. Volcanism (Tłumaczów Quarry)	
Work placement	Not applicable	

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