

**Subject card**

<b>Subject name and code</b>	Petrography - laboratory classes, PG_00193085						
<b>Field of study</b>	Geology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2027/2028		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	4	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Laboratory of Marine Geology -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Agnieszka Marcinowska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		3.0		17.0	50
<b>Subject objectives</b>	Acquire the ability to identify and describe the main rock-forming minerals. Acquire the ability to identify magmatic, sedimentary and metamorphic rocks by microscopic studies.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>		<b>Method of verification</b>		
	[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements		Can use a petrographic microscope to identify minerals and rocks. Knows how to plan studies for different types of rocks.		[SU1] oral statement/conversation/discussion [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 the optical characteristics of minerals and the principles of using a petrographic microscope. Knows the principles of rock classification.		[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 how to identify minerals and rocks in microscopic images and link them to the relevant rock-forming processes.		[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_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 rock-forming processes occurring in the interior and on the surface of the Earth in the past and today. Knows the research methods used in petrology.		[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion		

Subject contents	1. Optical features of rock-forming minerals and methods of their microscopic identification 2. Microscopic identification of magmatic rocks and their classification 3. Microscopic identification of sedimentary rocks and their classification 4. Microscopic identification of metamorphic rocks and their classification		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	oral statement/conversation/discussion	51.0%	5.0%
	activity during lessons, observation of a student's independent or team work	51.0%	10.0%
	theoretical and practical test	51.0%	85.0%
Recommended reading	Basic literature	Manecki A., Muszyński M. (red.), 2008. Przewodnik do petrografii, Uczelniane Wydawnictwa Naukowo-Dydaktyczne AGH, Kraków Penkala T., 1971. Optyka kryształów, Wyd. Naukowe PWN, Warszawa Borkowska M., Smulikowski K., 1973. Minerale skałotwórcze. Wyd. Geologiczne, Warszawa Barker A.J., 2014. A Key for Identification of Rock-forming Minerals in Thin-Section, CRC Press/Balkema Frost R.B., Frost C.D., 2014. Essentials of Igneous and Metamorphic Petrology, Cambridge University Press. Boggs S., JR., 2009. Petrology of Sedimentary Rocks, Cambridge University Press Klein C., Philpotts A.R., 2012. Earth Materials, Cambridge University Press	
	Supplementary literature	MacKenzie W.S., Adams A.E., Brodie K.H. 2017. Rocks and Minerals in Thin Section., CRC Press/Balkema Nesse W.D., 1991. Introduction to Optical Mineralogy, Oxford University Press Gill R., 2010. Igneous Rocks and Processes, a Practical Guide, A John Wiley & Sons, Ltd., Publication	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Optical characteristics of rock-forming minerals. Classifications of magmatic, sedimentary and metamorphic rocks. Microscopic description of rocks.		
Work placement	Not applicable		

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