

**Subject card**

<b>Subject name and code</b>	Sea Floor Geology - lecture, PG_00201092						
<b>Field of study</b>	Marine Hydrography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<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>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	2	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	practical	<b>Assessment form</b>			exam		
<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 Ewa Szymczak				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	0.0	0.0	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		2.0		18.0	50
<b>Subject objectives</b>	The aim of the course is to develop an understanding of the geological processes responsible for the evolution of the oceans, the geological structure of the oceanic crust, the morphological structure of the global ocean floor, as well as the types of marine sediments and their distribution patterns. Students will also become familiar with methods of ocean floor research, scientific programmes under which oceanic crust is studied, and the major achievements of ocean drilling programmes. The postglacial evolution of the Baltic Sea will also be presented.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[HML3-W03] knows and understands, at an advanced level, directions of development and the latest discoveries in the field of scientific disciplines forming the theoretical basis appropriate to the field of study	characterizes methods of geological research in the marine environment and explains their significance for major scientific discoveries	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[HML3-W02] knows and understands, at an advanced level, selected phenomena and processes occurring in the hydrosphere, atmosphere, lithosphere and biosphere, their interconnections and relations, as well as practical applications of this knowledge in professional activities related to the field of study	explains the causes, course, and consequences of geological processes occurring in the marine environment	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[HML3-U14] is able to use the applicable terminology in presenting and discussing problems related to the field of study	uses appropriate terminology when describing, presenting, and discussing issues related to the geological structure and morphology of the ocean and marine floor	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[HML3-U08] is able to independently use the professional literature available in traditional and electronic form, make an assessment, critical analysis and synthesis as well as the correct interpretation of the information obtained	analyzes and interprets, based on source materials, the morphological and structural elements of the seabed, the distribution of sediments, and their relationship with geological processes	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[HML3-W01] knows and understands, at an advanced level, selected facts, phenomena and processes, as well as methods and theories concerning them, explaining the complex relationships between them, constituting basic general knowledge in the field of scientific disciplines forming the theoretical foundations specific to the field of study	explains and characterizes the relationships between physical and geological processes occurring in the marine environment	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[HML3-W04] knows and understands, at an advanced level, the issue of measurements related to the exploration of sea basins and inland waters and tools allowing to describe, interpret and present the results of measurements	characterizes hydrographic and geological methods of marine research and explains their significance for seabed exploration and scientific discoveries	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion	
Subject contents	<ol style="list-style-type: none"> <li>1. The history of ocean floor research and contemporary research programmes.</li> <li>2. Evolution of ocean basins, history of geological development of modern oceans.</li> <li>3. Oceanic crust and its structure in the light of recent research results.</li> <li>4. Ocean basin floor topography forms and their relationship to geological processes.</li> <li>5. Sources of sedimentary material input to the seas and oceans.</li> <li>6. The regularities of the spatial distribution of sediments in the ocean.</li> <li>7. Marine sediments and their rate of sedimentation.</li> <li>8. Postglacial evolution of the Baltic Sea.</li> </ol>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written exam	51.0%	100.0%

Recommended reading	Basic literature	<p>Duxbury A. C., Duxbury A. B., Sverdrup K. A. 2002: Oceans of the World. Wyd. Naukowe PWN</p> <p>Frisch W., Meschede M., Blakey R. 2011. Plate tectonics. Continental drift and mountain building. Springer</p> <p>Leontiew O. K. 1989. Geology of the sea. Wyd. Naukowe PWN</p> <p>Lallemand S., Funicello F., 2009. Subduction zone dynamics, Springer-Verlag Berlin</p> <p>Yuen, D.A., Maruyama, S., Karato, S.-i., Windley, B.F. (Eds.), 2007, Superplumes: Beyond Plate Tectonics, Springer</p> <p>Witak M., 2013. Outline of the postglacial evolution of the Southern Baltic. [in:] J. Cyberski (Ed.), Coastal protection in state maritime policy.</p>
	Supplementary literature	<p>BURKE K.: Plate Tectonics, the Wilson Cycle and Mantle Plumes: Geodynamics from the Top. Annual Review of Earth and Planetary Sciences, Vol. 39.</p> <p>ERICKSON J.: Marine Geology: Undersea Landforms and Life Forms. Facts on File. New York 1996.</p> <p>FLOYD P. A. (ed.): Oceanic Basalts. Springer Science, 1991</p> <p>KEAREY P., KLEPEIS K. A., VINE F. J.: Global tectonics. Wiley-Blackwell, 2009.</p> <p>KENT C. C.: Plate Tectonics and Crustal Evolution. Butterworth-Heinemann, 2003</p> <p>LARTER R. D., LEAT P. T.: Intra-Oceanic subduction systems, The Geological Society, Londyn 2003</p> <p>SARLE R.: Mid-Ocean Ridges. University Printing House, Cambridge 2013</p> <p>SETON M. et al.: Global continental and ocean basin reconstructions since 200 Ma. Earth-Science Reviews, No 113(34), 2012</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Describe the types of oceanic basalts and the criteria for distinguishing them.</p> <p>Name the main morphological units of the oceans.</p> <p>Compare the active and passive marginal edges of the ocean.</p> <p>Characterise the distribution of biogenic sediments, identify factors influencing their distribution.</p>	
Work placement	Not applicable	

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