University of Gdańsk

Subject card

Subject name and code	Sedimentary basin analysis - lecture, PG_00191298						
Field of study	Geology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	3		Language of instruction		Polish		
Semester of study	5		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 Robert Sokołowski				
	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		1.0		19.0	50
Subject objectives	Knowledge of the relation between geological processes in the sedimentary basins in the past and the geological structure of selected areas. Knowledge of research methods: field, laboratory and analytical. Knowledge of the main trends in research of sediments of marine and terrestrial environments. Ability to analyse and reconstruct the development of facies within sedimentary basins.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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	Be able to plan the next steps in geological research individually or in teams, interact effectively in research teams in a variety of functions and take responsibility for the completion of assigned tasks.	[SK1] oral statement/conversation/ discussion [SK4] 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	Be able to correctly identify the main transgressive-regressive processes and cycles within sedimentary basins and define relevant research methods.	[SW4] test/exam - oral or written
[GEOLL3_W03] knows and identifies paleontological, mineralogical, petrographic and structural objects using appropriate methods	Knows and identifies the structural elements and main depositional environments within sedimentary basins based on modern research methods from different fields of geology.	[SW4] test/exam - oral or written
[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	Knows and understands terminology appropriate in the sedimentary basins analysis	[SW4] test/exam - oral or written
[GEOLL3_U02] has the skill of analytical and synthetic way of reasoning leading to correct inference based on the results obtained or the facts presented	Has the ability to analyse facies and synthesise geological data leading to the correct identification of selected elements of sedimentary basins.	[SU4] test/exam - oral or written
[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	Be able to reconstruct the development of selected parts of sedimentary basins on the basis of research results and analysis of archival materials	[SU4] test/exam - oral or written

Subject contents

Object of research, basic concepts.
Types of marine sedimentary basins.
Types of terrestrial sedimentary basins.
Research methods for sedimentary basins.
Facies analysis.
Maps of sedimentary basins.
Sequence stratigraphy - basic concepts.
Sequence models

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written colloquium	51.0%	100.0%

Recommended reading

Basic literature	Miall, D., 2000. Principles of Sedimentary Basin Analysis, Springer-Verlag, Heidelberg Catuneanu, O., 2006. Principles of sequence stratigraphy, Elsevier A.2. studiowana samodzielnie przez studenta Reading H.G. (red.), 2003. Sedimentary environments: processes, facies and stratigraphy, Blackwell Science Allen P.A., Allen J.R., 2005. Basin analysis. Principles and application, Blackwell Miall A.D., 2010. The Geology of Stratigraphic Sequences. Second Edition, Springer-Verlag, Heidelberg
Supplementary literature	Nittrouer C.A., Austin J.A., Field M.E., Kravitz J.H., Syvitski J.P.M., Wiberg P.L., 2007. Continental Margin Sedimentation:From Sediment Transport to Sequence Stratigraphy,Wiley-Blackwell Nichols G., 2007. Sedimentology and Stratigraphy. Second edition, Wiley-Blackwell
eResources addresses	

Example issues/ example questions/ tasks being completed

Outline the sedimentary basins formed in the aforementioned subduction zone
Characterize the transgressive systems tract (TST) for clastic environments

Work placement

Not applicable

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