



Subject card

Subject name and code	Coastal Environment, PG_00065653						
Field of study	Spatial Development						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		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	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Urban Design and Regional Planning -> Faculty of Architecture -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Miłosz Marciniak				
	Teachers						
Lesson types and methods of instruction	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		6.0		39.0	75
Subject objectives	The aim of the course is to familiarize students with the environmental conditions and determinants of urbanization and tourism development in the coastal zone, as well as the location and operation of maritime and coastal infrastructure.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W01] has in-depth and expanded knowledge of spatial development, urban planning and spatial planning, including activities used in the process of revitalization of degraded areas and ecological design		understands and describes the factors and mechanisms of development of sea areas, is able to communicate in the environment of various coastal zone users; understands and knows how to analyze phenomena and processes occurring in the marine environment and human impact on this environment		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K7_W02] has the knowledge necessary to understand the social, economic, legal and other non-technical conditions of design and planning.Including the principles of creating and developing forms of individual enterprise		has in-depth knowledge of spatial management, is able to explain the environmental conditions and determination of the location and operation of maritime and coastal infrastructure.		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K7_W03] has an extended and in-depth knowledge of environmental issues needed to formulate and solve complex spatial development tasks		has an extended and in-depth knowledge of environmental issues needed to formulate and solve complex spatial development tasks		[SW1] Assessment of factual knowledge		

Subject contents	Selected issue of coastal zone geology and hydrogeology. Specificity of groundwater occurrence in the coastal zone. Classification and mechanics of soils and bottom sediments. Influence of the type of bottom sediments on: possibilities of maintaining the depth of waterways in open water bodies and in the coastal zone, dredging works technologies, route selection and foundation of the offshore pipeline. Assessment of land suitability for foundation of objects in the coastal zone. Shore balance, debris transport in the coastal zone, debris streams, silting sand, shoreline and bottom dynamics. Forms of the sculpture of the edge and bottom of the shallow water. Types of sea shores and coasts - navigation characteristics and from the point of view of the construction and development of the port. Impact of climate change on the coastal zone. Identification of shoreline and coastal zone hazards (including floods and flooding, surface displacement). Protection of the sea shore and coastal environment: levees and anti-storm banks, shore reinforcements (spurs, bands, breakwaters and underwater thresholds, biotechnical cover), refutations. Examples of sea shore protection projects in Poland.		
Prerequisites and co-requisites	Ability to cause-effect-thinking, analysis and synthesis; knowledge of natural, social and economic determinants of spatial management gathered at previous stages of study; geographical knowledge obtained at earlier stages of education		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	60.0%	100.0%
Recommended reading	Basic literature	Zasady dokumentowania geologiczno-inżynierskich warunków posadowienia obiektów budownictwa morskiego i zabezpieczeń brzegu morskiego. PIG, Warszawa, 2009. Pruszek Z., Brzeg morski. Procesy fizyczne obszaru płytko- i nadwodnego. Wyd. IBW PAN, 2014. Pruszek Z., Skaja M., Problemy dynamiki i ochrony brzegu morskiego. Wyd. IBW PAN, 2014. Łabuz T., Sposoby ochrony brzegów morskich i ich wpływ na środowisko przyrodnicze polskiego wybrzeża Bałtyku, Raport WWF, 2013. The Geography of Transport systems. Chapter 6 https://transportgeography.org/	
	Supplementary literature	Mazurkiewicz B., Encyklopedia inżynierii morskiej. Wyd. Fundacja Promocji POiGM, Gdańsk 2009. Dyrektywy UE, ustawy i rozporządzenia, ekspertyzy i raporty dotyczące obszarów przybrzeżnych wykonane na potrzeby KPZK i gospodarki w strefie przybrzeżnej Furmańczyk K. (red.), Zintegrowane Zarządzanie Obszarami Przybrzeżnymi w Polsce – stan obecny i perspektywy, tom 1 – Problemy erozji brzegu. Uniwersytet Szczeciński, 2005. Furmańczyk K. (red.), Zintegrowane Zarządzanie Obszarami Przybrzeżnymi w Polsce – stan obecny i perspektywy, tom 2 – Brzeg morski – zrównoważony. Uniwersytet Szczeciński, 2006. Monitoring i badania dotyczące aktualnego stanu brzegu morskiego - ocena skuteczności systemów ochrony brzegu morskiego realizowanych w okresie obowiązywania wieloletniego "Programu ochrony brzegów morskich". IBW PAN, Gdańsk, 2013. Studium nad problemami oceny skutków środowiskowo-przestrzennych eksploatacji gazu z łupków w województwie pomorskim i przyległych obszarach morskich. Problemy ocen środowiskowych, numer specjalny, 2012.	
	eResources addresses		

Example issues/ example questions/ tasks being completed	Explain the transverse and longitudinal dislocation of sediments and their impact on the functioning of coastal infrastructure. Assessment of the legitimacy of cliff protection structures in Jastrzębia Góra. Hard and soft seashore protection systems. Threats to the chemical state and usable resources of aquifers in the coastal zone of the southern Baltic Purpose and conditions for performing dredging works. Spatial conflicts in the Baltic coastal zone related to shore and environmental protection.
Work placement	Not applicable

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