

Subject card

Subject name and code	Ecosystem based management, PG_00091470						
Field of study	Water Management and Protection of Water Resources						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2026/2027	
Education level	undergraduate 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 Subject group related to practical vocational preparation	
Mode of study	full-time studies		Mode of delivery			at the university	
Year of study	3		Language of instruction			English	
Semester of study	6		ECTS credits			2.0	
Learning profile	practical		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	0.0	0.0	20
	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	20	15.0	35.0	70		
Subject objectives	The general objective of the course is to provide students with knowledge of the basics of the ecosystem approach to management (EBM) and to introduce the range of tools that EBM uses.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	<p>[GWOZWL3-U12] formulate opinions on a selected topic and prepare small studies in English</p> <p>[GWOZWL3-U13] read with understanding specialized scientific texts in Polish and English</p> <p>[GWOZWL3-U04] distinguish between objectives, analyze and evaluate modern strategies for managing environment especially in the context of ecosystem approach to managing human activities in the environment with taking into account relevant law regulations and the indication of administrative bodies responsible for the management of waters and the protection of water resources</p> <p>[GWOZWL3-U15] by solving in groups the assigned problem situations, appropriately set priorities to achieve task defined by themselves or others</p> <p>[GWOZWL3-W02] the importance of knowledge in the sciences allowing to understand the processes and phenomena occurring in the hydrosphere, as well as knowledge of the social sciences and of the Earth's geographic environment - as a system of interrelated and interacting components</p> <p>[GWOZWL3-W05] assumptions of the ecosystem approach to management of the environment and human activities in the environment as well as the development directions in the field of applied solutions and scientific research for the protection and restoration of water resources in selected divisions of the national economy</p> <p>[GWOZWL3-W08] basic concepts and problems in the field of study in English</p>	<p>K_U12 - is able to formulate opinions on the ecosystem approach to management and write an essay in English</p> <p>K_U13 - can read with comprehension specialized scientific texts in English in the field of ecosystem approach to management</p> <p>K_U04 - can distinguish the objectives, analyze and evaluate the concept of ecosystem-based management of human activities</p> <p>K_U15 - is able, by solving in groups the given problem situations in the field of ecosystem-based management, appropriately set priorities for the implementation of a task defined by themselves or others</p> <p>K_W02 - knows and understands the importance of knowledge of science, as well as social sciences as a system of interrelated and interacting components of the social-ecological system.</p> <p>K_W05 - knows and understands the assumptions of the ecosystem approach to environmental management and human activities in the environment</p> <p>K_W08 - knows and understands the basic concepts and problems of ecosystem-based management in English</p>	<p>[SU2] presentation/project/paper/report [SU5] implementation of a problem task</p> <p>[SU1] oral statement/conversation/discussion [SU8] observation of student's independent or team work</p> <p>[SU2] presentation/project/paper/report [SU5] implementation of a problem task</p> <p>[SU8] observation of student's independent or team work</p> <p>[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task</p> <p>[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task</p> <p>[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task</p>
Subject contents	<p>Knowledge needs for EBM</p> <ol style="list-style-type: none"> 1.1. Principles and concepts 1.2. Science for management 1.3. Stakeholder participation in knowledge generation for EAF <p>2. Ecological aspects Ecosystem assessment</p> <p>3. Social and economic aspects</p> <ol style="list-style-type: none"> 3.1. ecosystem services 3.2. Market values. 3.3. Non-market values. 3.4. Stakeholders analysis <p>4. EBM tools</p> <ol style="list-style-type: none"> 4.1. Marine Spatial Planning identification and spatial visualisation of different possible sea uses, including economic activities, biological values, conservation sites, etc. 4.2. The precautionary principle a fundamental rule which is based on the assumption that no activity is allowed to occur until it can be shown that no damage will result from that activity. 4.3. Management tools and incentives mechanisms such as environmental accounting, EIA tools, environmental valuation, cost-benefit analysis, payment for environmental goods and services provided, Pigouvian taxes and subsidies, etc. 		

Prerequisites and co-requisites	English at a conversational level		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	evaluation of oral statements	51.0%	25.0%
	individual and team work	51.0%	25.0%
	problem assignment	51.0%	25.0%
	essay	51.0%	25.0%
Recommended reading	Basic literature	<p>Eades, S., 2008. A definition of the nature and meaning of the Ecosystem-based Approach, and how this translates into a suite of management tools. MARINET Marine Information Network, (www.marinet.org.uk), OSPAR: ICG-Bergen, October 2008.</p> <p>FAO Guidelines 2002. The Ecosystem Approach to Fisheries - Final draft. Food and Agriculture Organization of the United Nations, Rome, 2002, 85p.</p> <p>Kronenberg, J., Bergier, T., 2010. Challenges of Sustainable Development in Poland, Fundacja Sendzimira.</p> <p>Zacharias, M.A., Roff, J.C., 2000. A hierarchical ecological approach to conserving marine biodiversity. Conservation Biology 14 (5): 1327-1334.</p> <p>Laffoley, D., Maltby, E., Vincent, M.A., Mee, L., Dunn, E., Gilliland, P., Hamer, J.P., Mortimer, D., Pound, D., 2004. The Ecosystem Approach. Coherent actions for marine and coastal environments. A report to the UK government. Peterborough, English Nature. 65 pp.</p>	
	Supplementary literature	<p>http://www.ebmtools.org/</p> <p>Sustainable Development Applications, cz. I, II i III. Fundacja Sendzimira dostęp on-line</p> <p>Beaumont, N.J., Austen, M.C., Atkins, J.P., Burdon, D., Degraer, S., Dentinho, T.P., Deros, S., Holm, P., Horton, T., van Ierland, E., Marboe, A.H., Starkey, D.J., Townsend, M., Zarzycki, T., 2007. Identification, definition and quantification of goods and services provided by marine biodiversity: Implications for the ecosystem approach. Marine Pollution Bulletin 54:253265.</p> <p>CBD 2011. Ecosystem Approach Sourcebook - Tools and Approaches. http://www.cbd.int/ecosystem/sourcebook/tools/</p> <p>Raporty Millenium Ecosystem Assessment: http://www.unep.org/maweb/en/Reports.aspx</p> <p>Raporty TEEB The Economics of Ecosystems and Biodiversity: http://www.teebweb.org</p>	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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