



Subject card

Subject name and code	Environment Protection, PG_00041659						
Field of study	Transport and Logistics, Transport and Logistics						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle 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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Konrad Marszałkowski				
	Teachers		dr inż. Konrad Marszałkowski mgr inż. Paweł Szalewski dr inż. Mohamed Behilil				
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	15.0	45
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Ochrona środowiska W, TiL, sem 04, letni 21/22, (PG_00041659) - Moodle ID: 22253 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22253						
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	45		3.0		27.0	75
Subject objectives	To acquaint students with technical and legal issues in the field of marine environment protection.						

Learning outcomes	Course outcome		
	Subject outcome		Method of verification
	[K6_K03] understands non-technical aspects and effects of operation as an engineer, its influence on the environment and is aware of the responsibilities for the decisions taken	The student explains what are environmental management systems, what are the environmental impact assessments, what the principle of sustainable development is. The student uses the ISO 14001 standard. The student describes the methods of reducing the emission of pollutants into the atmosphere. The student lists the environmental protection devices used on ships. The student describes the principles of safe handling of goods, fuels and oils onto the ship. The student lists environmental protection devices that are part of the port equipment.	[SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills [SK2] Assessment of progress of work
	[K6_W03] has a basic knowledge on hydromechanics, thermodynamics, machine construction, ecology, materials science and electronics necessary to understand the construction and operation principles of means of marine transport	The student explains what are environmental management systems, what are the environmental impact assessments, what the principle of sustainable development is. The student uses the ISO 14001 standard. The student describes the methods of reducing the emission of pollutants into the atmosphere. The student lists the environmental protection devices used on ships. The student describes the principles of safe handling of goods, fuels and oils onto the ship. The student lists environmental protection devices that are part of the port equipment.	[SW1] Assessment of factual knowledge
Subject contents	<p>Environmental management systems - models and definitions. Aspects and significant environmental aspects in transport. ISO 14000 series of standards. Environmental impact assessment. Examples of environmental policies. The EMAS Directive and the ISO 14001 standard. The idea and practice of integrated management. The concept of sustainable development. Methods of reducing the emission of harmful substances into the atmosphere by means of transport. Equipping vessels with environmental protection devices (bilge water separators and washings after tank cleaning, sanitary sewage treatment plants, waste incinerators, ballast water treatment facilities, SCR reactors and scrubbers). Security and procedures applied during cargo handling, fuel and oil collection onto the ship. Equipping ports with environmental protection devices.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria		Percentage of the final grade
	60.0%		80.0%
	100.0%		20.0%
Recommended reading	Basic literature	1. Kaniewski E., Tymański S.: Ochrona środowiska. Gdynia, WSM, 1987. 2. Małaczyński M.: Ochrona środowiska morskiego przed zanieczyszczeniami ze statków. PG, Gdańsk, 1980. 3. Wiewióra A.: Ochrona środowiska morskiego w eksploatacji statków. WSM, Szczecin, 1999 r.	
	Supplementary literature	1. International Convention for the Prevention of Pollution from Ships MARPOL 73/78. 2. ISO 14001 Standard.	
	eResources addresses	Ochrona środowiska W, TiL, sem 04, letni 21/22, (PG_00041659) - Moodle ID: 22253 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22253	

Example issues/ example questions/ tasks being completed	1. Specify what the annexes to the MARPOL convention relate to. 2. Replace environmental protection devices on ships.
Work placement	Not applicable