



## Subject card

Subject name and code	Offshore Systems, PG_00045099						
Field of study	Ocean Engineering, Ocean Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty of Ocean Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Jacek Nakielski				
	Teachers		dr inż. Jacek Nakielski				
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		3.0		17.0	50
Subject objectives	The aim of the course is to familiarize students with the methods of obtaining raw materials, including crude oil and natural gas from under the seabed as well as obtaining energy from renewable sources on the example of offshore wind farms.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems	-Student potrafi zinterpretować akty prawne zawarte zarówno w Konstytucji RP, jak i Ustawie Prawa Energetycznego w celu ograniczenia negatywnych skutków oddziaływania energetyki na atmosferę oraz wskazać składnikami zrównoważonego rozwoju, z wykorzystaniem odnawialnych źródeł energii, które wiążą się m.in. z utrzymaniem bezpieczeństwa energetycznego oraz ochroną środowiska, a także zaspokojeniem potrzeb społecznych i gospodarczych kraju.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
	[K6_W06] has an organized knowledge on engineering methods and design tools allowing the conducting of projects within the construction and operation of ocean technology objects and systems	The student is able to interpret the legal acts contained in both the Constitution of the Republic of Poland and the Energy Law Act in order to reduce the negative effects of energy on the atmosphere and indicate the components of sustainable development, using renewable energy sources, which are related to maintenance of energy security and environmental protection, as well as satisfying social and economic needs of the country.	[SW1] Assessment of factual knowledge
	[K6_W08] has knowledge of the principles of sustainable development	The student is able to interpret the legal acts contained in both the Constitution of the Republic of Poland and the Energy Law Act in order to reduce the negative effects of energy on the atmosphere and indicate the components of sustainable development, using renewable energy sources, which are related to maintenance of energy security and environmental protection, as well as satisfying social and economic needs of the country.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects

Subject contents	<p>The course material includes knowledge of:</p> <ul style="list-style-type: none"> <li>- methods of searching for crude oil and natural gas under the seabed,</li> <li>- installation and construction of individual elements of the oil field,</li> <li>- basic offshore drilling methods,</li> <li>- methods of laying submarine pipelines,</li> <li>- the type of ocean engineering facilities for offshore works, including drilling and construction, machinery and equipment units for the construction and operation of the oil field (FSU / FSO, FPSU / FPSO, FPDOS, drilling and production platforms),</li> <li>- offshore crude oil and natural gas reloading operations,</li> <li>- offshore wind farm locations,</li> <li>- installation and construction of wind farms,</li> <li>- production of renewable energy,</li> <li>- Polish and international regulations and institutions supervising the course of individual investment stages, starting from the conceptual design, ending with operation and distribution.</li> </ul>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	tests (2 or 3)	50.0%	100.0%
Recommended reading	Basic literature	<p>Saipem, "Offshore Pipelines".</p> <p>Bai Y., Bai Q.: Subsea Engineering Handbook. ELSEVIER Inc, New York, 2012.</p> <p>EEA, Europe's onshore and offshore wind energy potential, Technical report No 6/2009.</p> <p>Projekt UpWind Integrated Wind Turbine Design, Offshore Foundations and Support Structures.</p> <p>Polish Wind Energy Association, Assessment of the development opportunities and potential of wind energy in Poland until 2020.</p>	
	Supplementary literature	<p>Specialist magazines: Offshore, World Oil, Ocean Industry.</p> <p>Websites: <a href="http://www.offshore-technology.com/contractors/lifting/dreggen/">www.offshore-technology.com/contractors/lifting/dreggen/</a>.</p> <p>Karlic S.: Zarys górnictwa morskiego. Wydawnictwo Śląsk, 1984.</p> <p>Wiewióra A., Wesolek Z., Puchalski J., Ropa naftowa w transporcie morskim, Publisher Trademar, 2007.</p>	
	eResources addresses	Adresy na platformie eNauczanie:	

Example issues/ example questions/ tasks being completed	-
Work placement	Not applicable