



## Subject card

Subject name and code	Navigation Devices, PG_00046537						
Field of study	Ocean Engineering, Ocean Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2023/2024		
Education level	first-cycle studies		Subject group				
Mode of study	Part-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		2.0		
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. Jacek Nakielski				
	Teachers						
Lesson types and methods of instruction	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		3.0		27.0	50
Subject objectives	The aim of the course is to familiarize students with the basics of navigation using various types of navigation devices that are part of the equipment of a watercraft.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[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				[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems				[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	[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				[SU1] Assessment of task fulfilment		
	[K6_W08] has knowledge of the principles of sustainable development				[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
Subject contents	1. Historical outline from antiquity to the present day. 2. Basic concepts related to navigation. 3. Sea charts, locations, lists of lights and radio signals. 4. Marking of the watercraft. 5. Devices and navigational aids: magnetic compasses, optical finders, logs, probes, timers, sextants, navigational aids. 6. Elements of terrestrial navigation. 7. Elements of astronavigation. 8. Elements of radio navigation. 9. Elements of inertial navigation. 10. Elements of electronic navigation. 11. Modern navigation equipment based on an exemplary watercraft.						
Prerequisites and co-requisites	Podstawowa znajomość związane z nautyką i budową jednostek pływających.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			50.0%		100.0%		

Recommended reading	Basic literature	<p>Gorazdowski Stefan, Morskie pomoce nawigacyjne, Wyd. Morskie, Gdynia 1968</p> <p>Wróbel Franciszek, Vademecum nawigatora, Wyd. Morskie, Gdańsk 1978</p> <p>Gawłowicz Józef, Nawigacja wczoraj i dziś: leksykon, Wyd. Pegaz, Warszawa 1994</p> <p>Urbańczyk Andrzej, Nawigacja prosta, łatwa, zabawna, Oficyna Wydawnicza Alma-Press, Warszawa 2017</p> <p>Piątek Zbigniew, Nawigacja morska w pytaniach i odpowiedziach, Oficyna Wydawnicza Alma-Press, Warszawa 2011</p>
	Supplementary literature	<p>Czajewski Jacek, Nawigacja żeglarska, Wyd. Komunikacji i Łączności, Warszawa 1985</p>
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	