University of Gdańsk

Subject card

Subject name and code	Navigation I - lecture, PG_00198782		
Field of study	Marine Hydrography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group 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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	1.0
Learning profile	practical	Assessment form	credit
Conducting unit	Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Arkadiusz Narloch	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	23.0	0.0	0.0	0.0	0.0	23

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	23	1.0	6.0	30

Subject objectives

Mastery of knowledge in the field of:

navigation (based on the framework training program at the operational level in the deck department in coastal shipping),

selected elements of nautical science and issues related to sea levels and tides for class B hydrographers (based on the framework training program for class B marine hydrographers). (based on the training framework for category B marine hydrographers).

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[HML3-W01] knows and understands, at an advanced level, selected facts, phenomena and processes, as well as methods and theories concerning them, explaining the complex relationships between them, constituting basic general knowledge in the field of scientific disciplines forming the theoretical foundations specific to the field of study	knows how to determine a position using two or three navigational marks	[SW4] test/exam - oral or written
	[HML3-W09] knows and understands, at an advanced level, issues related to route planning, safe route determination and monitoring in accordance with international regulations, including sources of information on navigational hazards and ways of obtaining it	knows at an advanced level the theoretical basis of travel planning and the principles of safe and efficient navigation in various hydrometeorological conditions, taking into account the impact of these conditions occurring in the coastal navigation area knows the principles of safe and efficient navigation in various hydrometeorological conditions, taking into account the impact of these conditions occurring in the coastal navigation area	[SW4] test/exam - oral or written
	[HML3-W06] knows and understands, at an advanced level, principles of operation and use of navigation devices and systems and issues related to the determination of the position of the object using all available methods	knows and understands, at an advanced level, the principles of operation and use of navigation equipment and systems	[SW4] test/exam - oral or written
	[HML3-W05] knows and understands, at an advanced level, map construction and its symbolism	knows at an advanced level, the structure of navigation maps and their content	[SW4] test/exam - oral or written
	[HML3-W03] knows and understands, at an advanced level, directions of development and the latest discoveries in the field of scientific disciplines forming the theoretical basis appropriate to the field of study	knows at an advanced level the theoretical principles of navigation and position determination using available techniques	[SW4] test/exam - oral or written
	[HML3-W02] knows and understands, at an advanced level, selected phenomena and processes occurring in the hydrosphere, atmosphere, lithosphere and biosphere, their interconnections and relations, as well as practical applications of this knowledge in professional activities related to the field of study	knows and understands, at an advanced level, the general characteristics and significance of tidal phenomena in navigation	[SW4] test/exam - oral or written

Subject contents	Introductory classes. 1. BASICS OF NAVIGATION 1. Shape and dimensions of the Earth, reference and coordinate systems on a sphere and ellipsoid, horizon and horizon circle. 2. Marine units of measurement. 3. Navigation deviation. 4. Determining direction, course, bearing, and course angle, and systems for expressing them. 5. The effect of currents and wind on a ship. Concepts: angle of course over ground (ACoG), angle of course over water (ACoW), true course (TC), drift, leeway. 6. Determining distance traveled, measuring speed over water and over ground. 7. Magnetism of the Earth and the ship, declination, deviation, total correction. 8. Compass, magnetic, and gyrocompass courses and bearings, gyrocompass correction. 2. GEODETIC AND CARTOGRAPHIC BASICS OF NAVIGATION 1. Basic information about maps: map numbering, title, legend, scale, map dating, map zero, height reference levels. 2. Using navigational charts: navigational hazards on nautical charts, navigational markings, IALA navigational marking system. 3. Characteristics of navigational lights. 4. Navigational aids. 5. Content and correction of nautical publications. 6. Symbols on navigational charts. 4. DETERMINING THE POSITION OF A SHIP 1. Graphical calculation of a ship's course. 2. Calculated and estimated position of a ship. 3. Taking into account the influence of wind and current during navigation. 4. Navigational measurements.

	5. Technique of performing navigational measurements. 6. Observed position of a ship. 7. Plotting the observed position of a ship from one or more objects.
Prerequisites and co-requisites	This subject is required by the Regulation of the Minister of Infrastructure and Development of 5 February 2014 on framework training programs and examination requirements for deck department seafarers (consolidated text: Journal of Laws of 2023, item 1566): attendance at all classes is mandatory. The Polish Naval Academy allows students to make up up to 20% of excused absences from these classes in a form that allows them to acquire missing knowledge and skills. Students who have passed the course but, due to absences exceeding 20% of classes or who did not make up the classes in a form that allows them to acquire missing knowledge and skills, will not receive an entry in the supplement confirming completion of studies recognized at the operational level in coastal navigation.
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
test	51.0%	100.0%

Recommended reading	Basic literature: URBAŃSKI J., KOPACZ Z., POSIŁA J.: Nawigacja morska. Część I i II. Wydawnictwo AMW, Gdynia 2000. WOLSKI A.: Pozycja zliczona i obserwowana w nawigacji morskiej. Inżynieria, Szczecin 2016. ŻOŁNIERUK D.: Nakres drogi okrętu. Część I. Wydawnictwo AMW, Gdynia 2016
	Supplementary literature: DĄBROWSKI T., CZAPLEWSKI K.: Locja morska. Wydawnictwo AMW, Gdynia 1998 WRÓBEL F.: Vademecum oficera wachtowego, TradeMar, Gdynia 2006
	eResources addresses:
Example issues/ example questions/ tasks being completed	1. Plotting a course taking into account hydrometeorological conditions (wind and current). 2. Determining the observed position using terrestrial methods from one, two, and three navigation marks. 3. Using navigation aids and a simulator when plotting a course on a map. 4. Determining the position of the vessel using a compass and a sextant.
Work placement	Not applicable

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