



Subject card

Subject name and code	Hydraulics and Pneumatics, PG_00060560						
Field of study	Naval Architecture and Offshore Structures						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group		Optional subject group 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		5.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute Of Naval Architecture -> Faculty Of Mechanical Engineering And Ship Technology -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Daniel Piątek				
	Teachers		dr inż. Daniel Piątek				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	15.0	0.0	0.0	60
	E-learning hours included: 0.0						
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=9694						
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	60		6.0		59.0	125
Subject objectives	Learning the principles and functioning of fluid drives of machines, widely used in the drive and control of ship and ocean engineering equipment						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems		the student knows the principles of operation of marine fluid drives: pneumatic and hydraulic		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K6_U03] can use computer-aided design, production and operation tools for ocean technology objects and systems		The student uses typical engineering software: spreadsheets, CAD systems, etc. to design drive systems		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[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		The student is able to perform calculations of typical drive systems and select their components		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Basic properties of fluid drive and control, rotating and displacement machines; working fluids; viscous fluid flows; drive and control elements; hydrostatic transmission; classification and graphic symbols of hydraulic system elements; pressure and flow rate control valves; hydraulic pumps and motors used in hydrostatic drives; throttling control of hydraulic motor speed in individual and group systems.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	laboratory - report		60.0%		25.0%		
	lecture - test		60.0%		50.0%		
	exercises - test		60.0%		25.0%		

Recommended reading	Basic literature	<p>1. Stryczek St.: Napęd hydrostatyczny, tom I Elementy, WNT W - wa. 2003</p> <p>2. Stryczek St.: Napęd hydrostatyczny, tom II Układy, WNT W - wa. 2003</p> <p>3. Szejnach, W: Napęd i sterowanie pneumatyczne. PWN, W-wa, 2022</p> <p>4. Szydełski Zb.: Napęd i sterowanie hydrauliczne, WKŁ WNT W - wa. 1999</p>
	Supplementary literature	<p>1. Pizoń A.: Elektrohydrauliczne analogowe i cyfrowe układy automatyki, WNT WNT W - wa. 1995</p> <p>2. Garbacik A.: Studium projektowania układów hydraulicznych, Ossolineum, Wrocław, W - wa. Kraków, 1997</p> <p>3. Palczak E.: Dynamika elementów i układów hydraulicznych, Ossolineum, Wrocław, W - wa. Kraków, 1997</p> <p>4. Paszota Z.: Aspects énergétiques des transmissions hydrostatiques, W.P.G. Gdańsk 2002.</p>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Hydraulika i pneumatyka - W (PG_00060560), OiKM - SO, sem 4, lato 2024/2025 - Moodle ID: 45509 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45509</p> <p>Hydraulika i pneumatyka - ĆW (PG_00060560), OiKM - SO, sem 4, lato 2024/2025 - Moodle ID: 45510 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45510</p> <p>Hydraulika i pneumatyka - LAB (PG_00060560), OiKM - SO, sem 4, lato 2024/2025 (HiP-LAB) - Moodle ID: 46064 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=46064</p>
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.