



## Subject card

Subject name and code	Remote Detection and Location of Objects, PG_00049433						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2025/2026		
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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Signals and Systems -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Marszał					
	Teachers	dr hab. inż. Jacek Marszał					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	15
	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	15	1.0		9.0	25	
Subject objectives	The aim of the course is to familiarize students with the foundations of navigation theory as well as construction and use of maritime navigation devices.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment	The student is able to make a critical analysis of the functioning of existing technical solutions of remote detection systems.			[SU5] Assessment of ability to present the results of task		
Subject contents	[K6_K02] is ready to critically assess possessed knowledge and acknowledge the importance of knowledge in solving cognitive and practical problems	Students are ready to critically assess their knowledge in the field of remote object detection.			[SK5] Assessment of ability to solve problems that arise in practice		
	1. Organizational matters: credit rules, preparation of speeches, consultations, literature 2. Discussion of the seminar topics: - Systems for remote detection and location of meteorological objects, - Systems for remote detection and location of flying objects, - Systems for remote detection and location of circular objects, - Systems for remote detection and location of floating and underwater objects 3. Development of seminar topics 4. Presentations, discussions 5. Summary						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Evaluation of the presentation	60.0%			100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Z. Czekala, Parada radarów, <i>Dom Wydawniczy Belona</i>, Warszawa 1999.</li> <li>2. R. Salamon, Systemy hydrolokacyjne, Wydawnictwo Gdańskie 2006.</li> <li>3. M. Skolnik, Radar Handbook Second Edition <i>McGrawHill</i> 1990.</li> <li>4. M. Skolnik, Introduction to Radar Systems.</li> <li>5. N. Levanon, Radar Signals, <i>Wiley</i> 2004.</li> <li>6. R. Wawruch, ARPA – zasada działania i wykorzystania <i>WSM</i> 2001.</li> <li>7. Pub.1310, Radar Navigation and Maneuvering Board Manual, National Imagery and Mapping Agency, Maryland, 2001.</li> </ol>
	Supplementary literature	Current websites of remote object detection systems.
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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