GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Critical systems software testing and QA, E:41040W0		
Field of study	Space and Satellite Technologies		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2024/2025
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	2.0
Learning profile		Assessment form	assessment
Conducting unit	Department Of Intelligent Interactive Systems -> Faculty Of Electronics Telecommunications And Informatics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Bogdan Wiszniewski	
	Teachers	prof. dr hab. inż. Bogdan Wiszniewski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	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	0.0	0.0	30

Subject objectives

To familiarise students with methods of critical systems software testing and quality assurance in space applications.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_W12	Student has knowledge on critical software development with special emphasis on testing and quality assurance.	[SW1] Assessment of factual knowledge
[K7_K03] Can analyse and implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures.	Student implements his tasks related to critical software systems testing maintaining high technical standards.	[SK2] Assessment of progress of work
K7_U07	Student is able to perform critical analysis of the requirements and restrictions with respect to the designed software system.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information

Subject contents

Environment, program and error models; Functional testing strategies; Structural testing strategies; Parallel and distributed systems software testing; Organization and planning of testing process; Product lifecycle vs. testing cycle; Software validation, verification and testing; Static analysis techniques; Documentation standards (IEEE, ESA); Quality assurance vs. product assurance

Prerequisites and co-requisites

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Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	50.0%	50.0%
laboratory	50.0%	50.0%

Recommended reading

Basic literature	Students will receive a reading list at the beginning of the semester.
Supplementary literature	-
eResources addresses	Adresy na platformie eNauczanie: Cybersecurity (in critical systems)- Spring'25 - Moodle ID: 1292 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1292

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

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