GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Software Quality, PG_00053909		
Field of study	Informatics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Computer Architecture -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Jarosław Kuchta	
	Teachers	dr inż. Jarosław Kuchta	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	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	2.0	43.0	75

Subject objectives

Know how to evaluate software quality and how to manage the quality in the software enterprise.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] can apply mathematical knowledge to formulate and solve complex and non-typical problems related to the field of study and perform tasks, in an innovative way, in not entirely predictable conditions, by:n- appropriate selection of sources and information obtained from them, assessment, critical analysis and synthesis of this information,n- selection and application of appropriate methods and toolsn	Is able to perform a qualitative assessment of selected design documents using appropriate metrics.	[SU2] Assessment of ability to analyse information
[K6_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	Is able to develop a specification of requirements for an IT system, taking into account quality requirements.	[SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Software quality introduction
2. Quality in the software development process
3. Software quality models
4. Quality measurements. ISO 9126 quality metrics
5. CMM/CMMI maturity models
6. ISO 9001 quality management system
7. AHP - comparative quality evaluation by Saaty
8. GQM - metrics applied by goals
9. Quality in Agile Programming
10. Bugs, faults, errors and defects
11. Error models
12. Environment models
13. Program models
14. Testing levels
15. Black-box testing strategies
16. White-box testing strategies
17. Test documentation. IEEE standards.
18. Classes of test scenarios
19. Test-case life cycle
20. Structure and attributes of test cases
21. Test implementation methods</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Software Engineering</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Problem solving projects</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>Written exam</td><td>50.0%</td><td>25.0%</td></tr>
<tr><td>Midterm colloquium</td><td>50.0%</td><td>25.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. Pressman R., Software Engineering. A Practitioner"s Approach. McGraw-Hill, 2005
2. Górski J., Inżynieria oprogramowania w projekcie informatycznym. MIKOM, 2000
3. Bugzilla Documentation, Administrators & End Users: http://www.bugzilla.org/docs/
4. Wiszniewski, B., Bogdan Bereza-Jarociński, B.: Teoria i praktyka testowania programów, PWN, 2006
5. Krawczyk H., Wiszniewski B.: Analysis and Testing of Distributed Software Applications, John Wiley & Sons, 1998.</td></tr>
<tr><td>Supplementary literature</td><td>1. Standard ISO/IEC 9001
2. Standard ISO/IEC 9126
3. Mark C. Paulk, Bill Curtis, Mary Beth Chrissis, Charles V. Weber: The Capability Maturity Model for Software</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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