



## Subject card

Subject name and code	Software Quality, PG_00053909						
Field of study	Informatics						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
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						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Jarosław Kuchta				
	Teachers		dr inż. Jarosław Kuchta  dr inż. Adam Kaczmarek  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	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		

Subject contents	<div>1. Software quality introduction</div> <div>2. Quality in the software development process</div> <div>3. Software quality models</div> <div>4. Quality measurements. ISO 9126 quality metrics</div> <div>5. CMM/CMMI maturity models</div> <div>6. ISO 9001 quality management system</div> <div>7. AHP - comparative quality evaluation by Saaty</div> <div>8. GQM - metrics applied by goals</div> <div>9. Quality in Agile Programming</div> <div>10. Bugs, faults, errors and defects</div> <div>11. Error models</div> <div>12. Environment models</div> <div>13. Program models</div> <div>14. Testing levels</div> <div>15. Black-box testing strategies</div> <div>16. White-box testing strategies</div> <div>17. Test documentation. IEEE standards.</div> <div>18. Classes of test scenarios</div> <div>19. Test-case life cycle</div> <div>20. Structure and attributes of test cases</div> <div>21. Test implementation methods</div>		
Prerequisites and co-requisites	Software Engineering		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	50.0%	25.0%
	Written exam	50.0%	25.0%
	Problem solving projects	50.0%	50.0%
Recommended reading	Basic literature	<div>1. Pressman R., Software Engineering. A Practitioner"s Approach. McGraw-Hill, 2005</div> <div>2. Górski J., Inżynieria oprogramowania w projekcie informatycznym. MIKOM, 2000</div> <div>3. Bugzilla Documentation, Administrators &amp; End Users: <a href="http://www.bugzilla.org/docs/">http://www.bugzilla.org/docs/</a></div> <div>4. Wiszniewski, B., Bogdan Bereza-Jarociński, B.: Teoria i praktyka testowania programów, PWN, 2006</div> <div>5. Krawczyk H., Wiszniewski B.: Analysis and Testing of Distributed Software Applications, John Wiley &amp; Sons, 1998.</div>	
	Supplementary literature	<div>1. Standard ISO/IEC 9001</div> <div>2. Standard ISO/IEC 9126</div> <div>3. Mark C. Paulk, Bill Curtis, Mary Beth Chrissis, Charles V. Weber: The Capability Maturity Model for Software</div>	
	eResources addresses	Adresy na platformie eNauczanie: Jakość Oprogramowania - 2023/24 - Moodle ID: 37354 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=37354">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=37354</a>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		