



Subject card

Subject name and code	Software Engineering, PG_00058932						
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			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Software Engineering -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Maciej Kucharski				
	Teachers		dr inż. Maciej Kucharski				
Lesson types	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		4.0		66.0	100
Subject objectives	"Software Engineering" course is aimed at explaining issues related to software development in industrial environment: complex systems designed for real customer/user, associated with particular business goals and expected level of quality, developed by large teams of software professionals.						
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 develops "Vision of IT system" document that includes a critical analysis of the present state of the customer organization as well as basic requirements and restrictions of the planned IT system.		[SU1] Assessment of task fulfilment		
	[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		The student develops analytical and design models of IT system using CASE (Computer Aided Software Engineering) software supporting tools.		[SU1] Assessment of task fulfilment		

Subject contents	Course content – lecture 1. Introduction 2. Scope and subject of software engineering. Essential motivations and concepts 3. Areas of software engineering - an overview 4. Planning and defining scope of software project. SSM approach and Rich Picture 5. Risk and social responsibility related to IT systems 6. Requirements engineering basics 7. Conceptual modelling 8. Use cases 9. Object-oriented analysis using UML 10. Modelling of logical system structure: class diagrams 11. Modelling of system structure: other structural diagrams 12. Modelling system dynamics: sequence and communication diagrams 13. Modelling system dynamics: representing object's state 14. System design: high-level design 15. System design: class design (low level) 16. Software reuse, design patterns 17. User interface design: motivations, terms, techniques 18. Software testing: terms, place in software development process 19. Software testing: techniques (black/white box), levels of testing, managing tests 20. Software deployment and maintenance 21. Configuration management and software evolution 22. Classical (waterfall) software lifecycle model 23. Non-classical software lifecycles and development processes 24. Adjusting development process to particular software project context 25. Software development methodologies (plan-driven and agile)											
Prerequisites and co-requisites	Presence during laboratory courses is mandatory. Delivery of all laboratory exercises and positive verification by tutor is required to pass the lab. Delays in delivering exercises affects the assessments. Only students who pass the lab are entitled to write the exam.											
Assessment methods and criteria	<table border="1" data-bbox="448 777 1489 882"> <thead> <tr> <th data-bbox="448 777 794 813">Subject passing criteria</th> <th data-bbox="794 777 1141 813">Passing threshold</th> <th data-bbox="1141 777 1489 813">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 813 794 848">Written exam</td> <td data-bbox="794 813 1141 848">50.0%</td> <td data-bbox="1141 813 1489 848">50.0%</td> </tr> <tr> <td data-bbox="448 848 794 882">Lab (assignments & tests)</td> <td data-bbox="794 848 1141 882">50.0%</td> <td data-bbox="1141 848 1489 882">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Written exam	50.0%	50.0%	Lab (assignments & tests)	50.0%	50.0%
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Recommended reading	Basic literature Supplementary literature eResources addresses	1. Maciaszek L.: Requirements analysis and system design, Addison-Wesley, 2007 2. Pressman R., Software Engineering: a Practitioner's Approach, 7th edition, McGraw-Hill, 2009 3. Sommerville I., Software Engineering, 9th edition, Addison-Wesley, 2010 4. Booch G., Rumbaugh J., Jacobsen I.: The Unified Modeling Language User Guide, 2nd edition, Addison-Wesley, 2005 5. Fowler M., UML distilled, 3rd edition, Addison-Wesley, 2003 No requirements										
Example issues/ example questions/ tasks being completed												
Practical activities within the subject	Not applicable											

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