



Subject card

Subject name and code	Requirements Engineering, PG_00047723						
Field of study	Informatics						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
Education level	second-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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Software Engineering -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksander Jarzębowicz				
	Teachers		dr inż. Maciej Kucharski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	12.0	0.0	0.0	15.0	0.0	27
	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	27		10.0		63.0	100
Subject objectives	To develop understanding of the role and scope of requirements engineering within the context of software lifecycle.						
	To acquire knowledge on the processes of requirements engineering and the methods and techniques of their realisation.						
	Practicing requirements engineering with respect to a selected problem of information system development.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can: n- apply analytical, simulation and experimental methods, n- notice their systemic and non-technical aspects, n- make a preliminary economic assessment of suggested solutions and engineering work	Student considers requirements (including non-functional requirements and limitations) in the wider context of customer organization and stakeholders' needs; can use requirements elicitation, analysis and specification techniques.	[SU1] Assessment of task fulfilment
	[K7_W43] Knows and understands, to an increased extent, the formal, technical and social aspects of the operation of complex information systems in the information society and in the global information infrastructure.	Student knows and distinguishes various categories of requirements, which capture the needs of stakeholders representing the environment the system will operate in.	[SW1] Assessment of factual knowledge
	[K7_W05] Knows and understands, to an increased extent, methods of process and function support, specific to the field of study.	Student understands the significance of requirements engineering and has knowledge about its processes as well as techniques used in particular phases of the processes.	[SW1] Assessment of factual knowledge
	[K7_U41] can select methods of modelling and analysis of information systems and applications using selected elements of theoretical computer science and modern programming tools	Student can select adequate way to specify a given requirement choosing from textual descriptions and modelling notations and their diagrams.	[SU1] Assessment of task fulfilment
	[K7_U42] can solve engineering and research problems including design, assessment and maintenance of information systems and applications, using experimental methods and management techniques	Student can identify and document requirements concerning an IT system, following established requirements engineering processes and techniques.	[SU1] Assessment of task fulfilment
Subject contents	<p>Lecture:</p> <ol style="list-style-type: none"> 1. Introduction; risks related to software projects; types of software Project; the cost of requirements failure 2. Requirements in the context of software lifecycle; 3. Different perspectives on requirements, Scope of requirements; Requirements lifecycle 4. System stakeholders and their viewpoints 5. System objectives and scope; Inventory of stakeholders 6. Modeling system context: business events Modeling system context: business use cases Identification of system scope 7. Requirements elicitation techniques: domain studies, analysis of an existing system, interviews, groupwork 8. Requirements analysis: verification and validation 9. Analytical techniques, quality criteria, checklists, CRUD analysis, text analysis, modelling, requirements inspections 10. Categories of requirements: objectives, functional, quality, constraints, assumptions 11. Specification of functional requirements: context diagrams, scenarios, data models, business events 12. Specification of functional requirements: system events, use cases, virtual windows 13. Specification of functional requirements: features, algorithms, state diagrams 14. Specification of quality requirements: reliability, security 15. Specification of quality requirements: performance, presentation, usability Specification of constraints and assumptions 16. Measurability of requirements 17. Management of requirements 18. Traceability of requirements 19. Requirements engineering in the LEVEL 2 of CMM <p>Project:</p> <ol style="list-style-type: none"> 1. Introduction 2. Selection of a problem 3. Specification of business objectives; Problem analysis and selection of system scope and interfaces 4. Specification of stakeholders 5. Specification of the problem – business use cases 6. System specification – functional and quality requirements 		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written test	50.0%	50.0%
	report from project	50.0%	50.0%

Recommended reading	Basic literature	Wiegiers, K., Beatty, J.: Software Requirements (3rd Edition). Microsoft Press, 2013
	Supplementary literature	ISO/IEC/IEEE Std 29148-2011, Systems and software engineering — Life cycle processes — Requirements engineering International Institute of Business Analysis, A Guide to the Business Analysis Body of Knowledge, ver. 3, 2015 Project Management Institute, Business Analysis for Practitioners: A Practice Guide, PMI, 2015 International Requirements Engineering Board, IREB Certified Professional for Requirements Engineering, ver. 2.2.2, 2017
	eResources addresses	Adresy na platformie eNauczenie: Inżynieria wymagań MSU 2022/2023 - Moodle ID: 27267 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=27267
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	