GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Information Systems Evolution Management, PG_00048283
Field of study	Informatics, Biomedical Engineering, Biomedical Engineering, Biomedical Engineering
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
Education level	second-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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
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. Andrzej Wardziński
	Teachers	dr inż. Andrzej Wardziński

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	4.0	16.0	50

Subject objectives	The goal of this course is to develop understanding of the role and scope of the processes of information systems evolution, to acquire knowledge of the methods and techniques of IT systems operational management, their modifications, integration, migration, support services and continuity management

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_K02] is ready to provide critical evaluation of received content and to acknowledge the importance of knowledge in solving cognitive and practical problems	The student can analyze the system architecture in terms of ease of evolution and scalability	[SK5] Assessment of ability to solve problems that arise in practice
	[K7_U42] can solve engineering and research problems including design, assessment and maintenance of information systems and applications, using experimental methods and management techniques	The student can plan the work the information system change management and assurance of service level and business continuity.	[SU1] Assessment of task fulfilment
	[K7_W41] Knows and understands, to an increased extent, the standards, production methods, life cycle and development trends of software as well as information systems and applications.	The student knows and understands the main processes of system evolution management (ITIL) and evolutionary software development processes (SCRUM).	[SW1] Assessment of factual knowledge
	[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 workn	The student can analyze the processes of information system change management, business continuity and service level including aspects of business processes, organization, location, data, applications and infrastructure.	[SU1] Assessment of task fulfilment
	[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.	The student knows the properties of system architectures and their components and is able to apply them to ensure ease of evolution, maintenance and scalability	[SW1] Assessment of factual knowledge

Subject contents	**Lecture**
	The scope of the lectures includes:
	- Information systems evolution process
	- oftware quality and maintainability
	- Change analysis and management
	- Architecture and design patterns
	- Data quality
	- Configuration and release management, Continuous integration
	- Quality assurance, software code quality
	- Evolutionary software development model
	- Agile methodologies, XP, SCRUM
	- IT services management, ITIL, DevOps
	Student project
	During this project students work in groups. Groups receive a task requiring analysis in the areas like system changes (integration, migration), or management of system continuity or service level. The aim of the project is to use the knowledge acquired during the course to analyze the problem for a particular information system and determine organizational and technical solutions.
Prerequisites and co-requisites	No prerequisites

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	50.0%	50.0%
	Theory	50.0%	50.0%

Recommended reading	Basic literature	1. ISO/IEC 20000-1:2011 (IEEE 20000-1:2011), "Information technology - Service management", 2011 2. Ken Schwaber, Jeff Sutherland, SCRUM Guide, SCRUM Alliance, 2017 3. Martin Fowler, Kent Beck, John Brant, William Opdyke, Don Roberts, „Refactoring: Improving the Design of Existing Code", Addison-Wesley 2012
	Supplementary literature	1. T. Mens, S. Demeyer, Software Evolution, Springer-Verlag, 2008 2. Steve McConnell, „Software Estimation: Demystifying the Black Art", Microsoft Press, 2006 3. J. Hurwitz, R. Bloor, M. Kaufman, F. Halper, "Service Oriented Architecture For Dummies", Wiley, 2009 4. Jurgen Appelo, „Management 3.0: Leading Agile Developers, Developing Agile Leaders", Addison-Wesley, 2011 5. John van Bon, "Foundations of IT Service Management: based on ITIL", Van Haren Publishing, 2005
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	- measures of ease of maintenance and changes (evolution) of the system
	- design patterns used in the evolutionary software development
	- architectural patterns for the evolution of systems and their scalability
	- service level management (SLA)
Work placement	Not applicable