University of Gdańsk

Subject card

Subject name and code	Software Engineering, PG_00143822		
Field of study	Informatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study
Mode of study	part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish pl
Semester of study	4	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Robert Fidytek	
	Teachers	dr Robert Fidytek	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	10.0	0.0	0.0	20

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	20	0.0	55.0	75

Subject objectives

Mastery of knowledge and skills in:
- methodological foundations of information systems development,
- structural, object-oriented, social and adaptive methodologies of information systems development,
- linear, spiral and incremental-iterative system life cycle,
- methods and techniques of designing information systems
- CASE (Computer Aided Software Engineering) packages.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[INFL3_U06] is able to design, create, run and test programs using dedicated tools and adequate templates	Establishes criteria and evaluates methodologies, methods, techniques and tools for the development of information systems information systems (TSI) with a view to their effective selection for the specific user, constructs functioning IT solutions that function in practice.	[SU2] presentation/project/paper/ report
[INFL3_W04] has structured knowledge in the field of software engineering, software specifications, validation and verification, and tools supporting the software development process	Defines the basic concepts and categories of contemporary methodologies for developing information systems, lists the types of methodologies and tools of creating information systems, explains the processes of effective design and implementation of IT projects	[SW2] presentation/project/paper/ report [SW3] text preparation/written work
[INFL3_U04] is able to work in a team of IT specialists, manage his time and make commitments and meet deadlines, communicate using various techniques including dedicated tools	Solves problems to meet IT needs and objectives user plans the strategy of computerisation of companies and institutions	[SU2] presentation/project/paper/ report [SU3] text preparation/written work

<table>
<tr><td>Subject contents</td><td>• Analysis processes in the context of software engineering (phases of the system life cycle, functional, non-functional analysis, customer-supplier relationship, methodological basis of information systems development
• Design and types of information systems (types of system life cycles, modular design, SOA architecture, classes of systems used in business)
• SOA, classes of systems used in business)
• Fundamentals of structural analysis (aims, meaning and assumptions of structural analysis, notations used in the analysis phase)
• Fundamentals of object-oriented analysis (objectives and meaning of object-oriented analysis, object-oriented analysis processes)
• Modelling in object-oriented analysis (notations, techniques and tools used, UML, BPMN, SysML)
• Examples of technological support for structured and object-oriented analysis, support for analysis using CASE systems (Computer Aided System Engineering)
• Interface design. Design processes for forms and reports.
• Design of dialog boxes and dialogue sequences
• Use of guides and checklists in design processes
• Use case diagrams identification of PUs, advanced specification of relationships, introduction of stereotypes into the model, managing the complexity of complex use case models using packages</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></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></td><td>50.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>1. Wrycza S., Marcinkowski B., Wyrzykowski K., Język UML 2.0 w modelowaniu systemów informatycznych, Helion, Gliwice 2005
2. Wrycza S., Marcinkowski B., Maślankowski J., UML 2.x. Ćwiczenia zaawansowane, Helion, Gliwice 2012
3. Valacich J., George J., Hoffer J., Essential of System Analysis and Design, Fifth Edition, Prentice Hall, 2012</td></tr>
<tr><td>Supplementary literature</td><td>1. Booch G., Rumbaugh J., Jacobson I., The Unified Modeling Language User Guide, Second Edition, Addison-Wesley, Boston 2005
2. Booch G., Maksimchuk R., Engle M., Young B., Conallen J., Houston L., Object-Oriented Analysis and Design with Applications (3rd Edition), Addison Wesley, 2007</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>Work placement</td><td>Not applicable</td></tr>
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