

Subject card

Subject name and code	Digitization of Business Processes, PG_00156881						
Field of study	Finance and Accounting						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's 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	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		4.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Business Informatics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Beata Zackiewicz-Brunke				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	45.0	0.0	0.0	60
	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	60		10.0		30.0	100
Subject objectives	1. A. Ability to critically select and master the functionality of IT tools for modeling, simulating and analyzing business processes. B. Knowledge and good practices in using design notations for modeling business processes C. Ability to build multidimensional business process models D. Ability to parameterize business process models for simulation purposes E. Use of various simulation algorithms to simulate business process models F. Analysis of business process simulation results G. Designing and verifying as-is, what-if, to-be scenarios.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FiRL3_K01] Self-development: - understands the need for development and lifelong learning - is able to supplement and improve the acquired knowledge and skills - knows his strengths and weaknesses, sets ambitious goals to the best of his ability - knows how to accept failure and admit mistakes.	Self-improvement: [understands the need for development and lifelong learning; is able to supplement and improve acquired knowledge and skills in the area of business process modeling and digitization; knows his/her strengths and weaknesses, sets ambitious goals according to his/her capabilities; is able to accept failure, admit a mistake]	[SK2] presentation/project/paper/report [SK8] observation of student's independent or team work
	[FiRL3_U01] The student understands and can correctly interpret complex economic phenomena in finance and accounting, and other social sciences. The student understands and can explain the content of announcements of economic institutions, articles published in the daily press and journals in the field of finance (excluding scientific journals). The student correctly applies concepts of social sciences.	Understands and is able to correctly interpret complex economic phenomena in the field of management science and quality as well as modeling and digitalization of business and social processes.	[SU2] presentation/project/paper/report
	[FiRL3_K05] Responsibility: - meets deadlines - is able to properly identify priorities for the implementation of the task set by him - consistently strives to achieve the set goal - is able to work systematically and independently - observes the rules and norms of social coexistence.	Responsibility: [meets deadlines; is able to appropriately define priorities for the implementation of a task he/she has defined; consistently pursues a goal; is able to work systematically and independently in the area of business process modeling and digitization; complies with the rules and norms of social life]	[SK2] presentation/project/paper/report
	[FiRL3_K03] Communication: - is able to present his view, issue in a way that others can understand - boldly (but thoughtfully) expresses his opinion, is not afraid to ask questions - is able to culturally participate in discussions - is able to give constructive criticism.	Communication: [is able to present his/her view, issues in the area of business process modeling and digitization in a way that is understandable to others; boldly (but thoughtfully) expresses his/her opinion, is not afraid to ask questions; is able to participate in discussions in a cultured manner; is able to express constructive criticism]	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
	[FiRL3_U04] The student can forecast economic processes and phenomena in finance and accounting using advanced methods and tools.	Is able to forecast business processes and phenomena using advanced methods and tools	[SU2] presentation/project/paper/report
	[FiRL3_W07] The student has advanced knowledge of norms and rules (legal, organizational, moral and ethical) in finance and accounting. Knows and understands the concepts and principles of industrial property protection and copyright law.	Has advanced knowledge of standards and rules (legal, organizational, moral and ethical) in the field of modeling and digitizing business processes.	[SW2] presentation/project/paper/report
	[FiRL3_K06] Creativity: - thinks creatively, is able to go beyond the usual patterns, - is able to think and act in an entrepreneurial manner, - is able to adapt flexibly to the requirements of the environment.	Creativity: [thinks creatively, is able to go beyond the usual patterns in the area of business process modeling and digitization; is able to think and act in an entrepreneurial manner; is able to flexibly adapt to the requirements of the environment]	[SK2] presentation/project/paper/report [SK8] observation of student's independent or team work
	[FiRL3_U07] The student analyses the proposed solutions to problems in the disciplines of management and quality sciences and economics and finance, especially in the field of finance and accounting, and is able to present their advantages and disadvantages and propose appropriate solutions in this regard.	Analyzes proposed solutions to problems in the field of management science and quality, in particular in the field of modeling and digitalization of business and social processes.	[SU2] presentation/project/paper/report

	Course outcome	Subject outcome	Method of verification
	[FiRL3_W06] The student has advanced knowledge of methods and tools, including data acquisition and analysis techniques, appropriate to management science and quality, which allow describing economic structures and institutions and the processes within and between them.	Knows advanced methods and tools, including data acquisition and analysis techniques, appropriate for modeling and digitizing business processes	[SW2] presentation/project/paper/report
	[FiRL3_U03] The student can properly analyse the causes, course and effects of specific processes and phenomena in finance and accounting, using advanced theories and relevant social sciences methods. Can identify stakeholders of processes and phenomena from the disciplines of management and quality sciences and economics and finance.	Is able to properly analyze the causes, course and effects of specific business processes using advanced theories and appropriate methods of social sciences. Is able to identify stakeholders of business processes	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[FiRL3_U02] The student can acquire data from various sources to analyze specific economic processes and phenomena related to finance. Is able to use information technologies.	Is able to obtain data from various sources for modeling and digitalization of business processes.	[SU2] presentation/project/paper/report

Subject contents

1.1. Design and simulation tools

a) selection criteria, typical functionality

b) ADONIS

c) Enterprise Architect

d) BPMN.io

1.2. Notations for designing business process models

a) Business Process Model and Notation

b) BPMS notation

c) UML language

1.3. Multidimensional business process modeling

a) dynamic use of data in business processes

b) combining process algorithms with external interactions

c) supporting interactions in the process with work environment models

d) structural specification of IT artifacts and data in the process environment

1.4. Parameterization of business process models

a) execution, waiting, storage and transport times in process tasks

b) refining parallel threads duplicate tokens, deadlocks, parallelism in resource-constrained conditions

c) probability distributions on decision gates, variables and agents

d) simulation input parameters e) combining models for initiating intermediate simulations

f) algorithmic constraints and countermeasures

1.5. Business process simulation

a) estimating business process time and costs

b) accounting analysis

c) path analysis

d) load analysis

	e) stationary utilization analysis f) non-stationary utilization analysis 1.6. Analysis of business processes in as-is, what-if, to-be scenarios. a) predefined analytical queries b) predefined evaluation queries c) authoring queries d) typical errors and traps in creating process models e) good practices in constructing to-be processes.		
Prerequisites and co-requisites	Basic knowledge of management concepts and IT tools supporting company management.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	systematic assessment of increments	51.0%	15.0%
	Scope, quality and degree of adaptation of the project to the design field segment:	51.0%	85.0%
Recommended reading	Basic literature	1. Autorskie materiały dydaktyczne (wykładowe i laboratoryjne) prowadzących zajęcia 2. Gawin B., Marcinkowski B.; Symulacja procesów biznesowych. Standardy BPMS i BPMN w praktyce; Onepress [ostatnie wydanie] 3. Gawin B., Systemy informatyczne w zarządzaniu procesami Workflow; Wydawnictwo Naukowe PWN, Warszawa [ostatnie wydanie]	
	Supplementary literature	1. Drejewicz S., Zrozumieć BPMN. Modelowanie procesów biznesowych. Wydanie 2 rozszerzone; Onepress [ostatnie wydanie]	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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