GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	BUSINESS PROCES MANAGEMENT, PG_00070645			
Field of study	Engineering Management			
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	Full-time studies	Mode of delivery	at the university	
Year of study	3	Language of instruction	Polish	
Semester of study	5	ECTS credits	6.0	
Learning profile	general academic profile	Assessment form	exam	
Conducting unit	Department of Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology			
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marzena Grzesiak		
	Teachers			

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	45.0	0.0	0.0	75
	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	75	3.0	72.0	150

Subject objectives	to prepare students to use analytical and simulation methods to model and improve management processes, based on knowledge of the use of simulation models in management practice, in the context of solving complex problems of modern management and improving organizational processes.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W05] possesses advanced knowledge in integrating data from various sources and in the methods that enable a comprehensive analysis of contemporary management issues.	knows and understands the use of simulation models in management practice, in the context of analyzing and improving complex organizational processes based on data from multiple sources.	[SW3] Assessment of knowledge contained in written work and projects
	[K6_K03] is prepared to critically assess the knowledge they possess, which is necessary for solving cognitive and practical problems, and to supplement any gaps with opinions from external experts.	is ready to critically evaluate their own assumptions and simulation model results and to verify them through consultation with experts and analysis of relevant literature in order to reliably solve organizational problems.	[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work
	[K6_U01] is able to analyze and evaluate complex processes in terms of their improvement, using various methods, including analytical and simulation techniques.	is able to analyze and improve complex processes by applying analytical and simulation methods discussed in class to model organizational activities and assess their effectiveness.	[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task

Subject contents	Course content – lecture
	1. Introduction to the Course 2. Defining Basic Concepts, Queuing Systems, Models 3. General Characteristics of the Process Approach in an Organization 4. Queuing Theory - Selected Topics 5. Structure of a Simulation Model (Static and Dynamic) 6. Principles of Building a Process Map 7. Introduction to iGrafx 8. Structure: Department, Activity, Resources, Costs, Transaction Generator, Schedules 9. Principles for Assigning Properties to Activities: Inputs, Outputs, Task, Resources, Attributes 10. Defining a Task (Task Type, Duration, Schedule, Capacity) 11. Defining Inputs to an Activity (Starting Point, Input Transaction Collection) 12. Transaction Generators, Types and Method of Defining 13. Resources, Defining (Classification, Costs, Schedule, Overtime, Costs, Availability, Attributes), Assigning to Tasks (Type, Origin, Assignment Method, Constraint, Waiting Options, Affinity) 14. Tasks, Types (Work, Delay, Subprocess, Concurrent Process), Costs (Value Class), Overtime Performance 15. Attributes, Defining (Location, Type, value, name), setting values 16. Defining decision-making activities 17. Defining the simulation environment 18. Rules for scenario construction 19. Conducting a simulation experiment 20. Analyzing the results. 21. No-code tools - principles of working with the platform
	Course content – laboratory 1. Getting Started with the Tool - Performing a Reproductive Exercise 2. Building a Process Diagram with Parameter Definition 3. Defining and Using Schedules 4. Defining and Using Transaction Generators 5. Defining Task Parameters (Task Type, Duration, Schedule, Capacity), Types (Work, Delay, Subprocess, Concurrent Process), Costs (Value Class), Overtime 6. Defining Inputs to Activities (Starting Point, Input Transaction Collection) 7. Defining Resources (Classification, Costs, Schedule, Overtime, Costs, Availability, Attributes), Assigning to Tasks (Type, Origin, Assignment Method, Constraint, Waiting Options, Affinity) 8. Defining Attributes (Position, Type, Value, Name), Setting Values, and Using them in Process Control 9. Defining Decision-Making Activities 10. Defining the Simulation Environment 11. Creating Scenarios 12. Conducting a Simulation Experiment 13. Analyzing Results. Developing a Simple Queuing System Model Based on the Description 14. Developing a Custom Design for a Complex Queuing System. 15. Creating a prototype application and implementation documentation using a no-code tool.

Prerequisites and co-requisites	

Assessment methods and criteria			
	Subject passing criteria	Passing threshold	Percentage of the final grade
	Process hackathon – design process documentation	60.0%	17.5%
	Assessment of the quality of model constructed step by step by stages	0.0%	17.5%
	Quiz with closed and open-ended questions	60.0%	32.5%
	Assessment of the implementation of the design task	60.0%	32.5%

Recommended reading	Basic literature	1. Grzesiak M.: Modelowanie procesów biznesowych z wykorzystaniem narzędzi iGrafx Process 2015, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2018 2. Filipowicz B.: Modele stochastyczne w badaniach operacyjnych. WNT, Warszawa 1996 3. Grajewski P.: Organizacja procesowa, PWE, Warszawa 2007 4. Mielczarek B.: Modelowanie symulacyjne w zarządzaniu. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2009 5. Dokumentacja programu iGrafx Process 2013, dostępna w Internecie
	Supplementary literature	1. Adair C.B., Murray B.A.: Radykalna reorganizacja firmy. Wydawnictwo Naukowe PWN, Warszawa 2002 2. Champy J.: X-engineering przedsiębiorstwa. Wydawnictwo Placet, Warszawa 2003 3. Hammer M.: Reinżynieria i jej następstwa. Wydawnictwo Naukowe PWN, Warszawa 1999 4. Tyszer J., Symulacja cyfrowa, WNT, Warszawa 1978
	eResources addresses	

Example issues/ example questions/ tasks being completed	• Build a simulation model of the selected proces • Carry out a simulation experiment • Interpret the results and make improvements to the proces

Practical activites within the subject	Not applicable

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