



## Subject card

Subject name and code	Business process analysis and optimization, PG_00045372						
Field of study	Data Engineering						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
Education level	first-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	3	Language of instruction			English		
Semester of study	5	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Management -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Marzena Grzesiak				
	Teachers		dr inż. Marzena Grzesiak				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		5.0		50.0	100
Subject objectives	The aim of the course is to acquaint students with the basics of business process modeling using standard notation, analysis and optimization.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_K05] understands the need for self-improvement through systematic acquisition of knowledge and skills.	The student knows the notation modeling of business processes and their application in the functioning of enterprises			[SK1] Assessment of group work skills [SK2] Assessment of progress of work		
	[K6_W01] has basic knowledge in the field of mathematics, including mathematical analysis, algebra, geometry, probability calculus, statistics and numerical methods, necessary to formulate and solve simple tasks in the field of IT						
	[K6_U06] Independently solves complex engineering tasks using literature, materials and devices, prepares extensive documentation of the developed solution using appropriate description techniques.						

Subject contents	<p>LECTURE:</p> <p>1) Business models and processes. Principles and objectives of business process modeling. Modeling business processes in selected methodologies.</p> <p>2) Management of the organization through the management of its processes</p> <p>3) Business processes and their functions. Definition and identification of business functions. The definition of business processes and sub-processes. Objects in business processes. Areas of responsibility.</p> <p>4) i 5) Modeling business processes. Characteristics of practical notation used for modeling business processes. Standards BPMN , BPMS and UML</p> <p>6) Scheduling business processes. Classification tasks. Methods of planning (CPM , PERT)</p> <p>7) Optimization and audit in business processes. Estimating the time and cost of business processes</p> <p>8) Kolokwium</p> <p>LAB:</p> <p>1) Business process modeling using selected notation</p> <p>2) The analysis of strategic business processes in the enterprise</p> <p>3) Audit of the business process and methods of process optimization</p> <p>4) Methods for scheduling business processes</p> <p>5) Business Process Management</p>														
Prerequisites and co-requisites	Business process modeling														
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 1424 794 1451">Subject passing criteria</th> <th data-bbox="801 1424 1139 1451">Passing threshold</th> <th data-bbox="1145 1424 1482 1451">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1460 794 1487">Project</td> <td data-bbox="801 1460 1139 1487">60.0%</td> <td data-bbox="1145 1460 1482 1487">40.0%</td> </tr> <tr> <td data-bbox="456 1496 794 1523">Exercices classes</td> <td data-bbox="801 1496 1139 1523">60.0%</td> <td data-bbox="1145 1496 1482 1523">20.0%</td> </tr> <tr> <td data-bbox="456 1532 794 1559">Final test</td> <td data-bbox="801 1532 1139 1559">60.0%</td> <td data-bbox="1145 1532 1482 1559">40.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Project	60.0%	40.0%	Exercices classes	60.0%	20.0%	Final test	60.0%	40.0%
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Recommended reading	Basic literature	<p>Drejewicz Sz., Zrozumieć BPMN. Modelowanie procesów biznesowych, Wydawnictwo Helion, Gliwice 2012.</p> <p>Piotrowski M., Procesy biznesowe w praktyce. Projektowanie, testowanie i optymalizacja, Wydawnictwo Helion, Gliwice 2013.</p> <p>Gawin B., Marcinkowski B., Symulacja procesów biznesowych. Standardy BPMS i BPMN w praktyce , Wydawnictwo Helion, Gliwice 2014.</p> <p>Gawin B., Systemy informatyczne w zarządzaniu procesami Workflow, Wydawnictwo Naukowe PWN, Warszawa 2015.</p>													

	Supplementary literature	<p>Fowler M., Scott K. UML w kropelce. Oficyna wydawnicza LPT, Warszawa 2002.</p> <p>Wrycza S., Marcinkowski B., Wyrzykowski K., Język UML 2.0 w modelowaniu systemów informatycznych, Wydawnictwo Helion, Gliwice 2005.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>1) Select the application areas of business modeling</p> <p>2) Point to ways of modeling the business process logic used in BPMN . Give examples</p> <p>3) Explain the concept of a business rule , replace and discuss the key categories of business rules and give examples</p>	
Work placement	Not applicable	