



Subject card

Subject name and code	Business Data Semantics and Representation, PG_00053100						
Field of study	Data Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
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			Polish		
Semester of study	6	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Informatics in Management -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Sławomir Ostrowski					
	Teachers	dr lic. Adegboyega Ojo dr inż. Sławomir Ostrowski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	E-learning hours included: 0.0						
Business data semantics and representation 2023 - Moodle ID: 29559 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29559							
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	8.0	57.0	125		
Subject objectives	Students will at the end of the module be able to: Explain the core concepts related to Web Intelligence and how the domain has evolved over time (from 2000 to 2021). Demonstrate the understanding of the Semantic Web technologies in building intelligent web applications Evaluate Open and Linked Data based data platforms Apply knowledge graphs and their various applications in building intelligent web applications						
Learning outcomes	Course outcome	Subject outcome		Method of verification			
	[K6_U11] is able to use mathematical and IT tools in economics.	Demonstrate the understanding of the Semantic Web technologies in building intelligent web applications		[SU1] Assessment of task fulfilment			
	[K6_W03] Knows the applications of geoinformation systems, spatial data formats, methods of creating and analysing digital maps, architecture and services of satellite navigation systems.	Demonstrate the understanding of the Semantic Web technologies in building intelligent web applications		[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge			
	[K6_K03] Knows how to cooperate or work in a project team and take managerial or executive functions.	Apply knowledge graphs and their various applications in building intelligent web applications		[SK1] Assessment of group work skills			

Subject contents	<p>Idea of the Semantic Web</p> <p>Monitoring of the Internet, brand protection</p> <p>NLP as a knowledge discovery method of the Semantic Web, sentiment analysis</p> <p>Social networks analysis</p> <p>Introduction to ontologies</p> <p>Resource Description Framework (RDF)</p> <p>Web Ontology Language (OWL)</p> <p>Semantic Web Rule Language (SWRL) as an extension of OWL</p> <p>Description Logic (DL) and inference algorithms</p> <p>knowledge bases vs. databases</p> <p>Elements of ontology engineering</p> <p>Application of semantic technologies in business</p>											
Prerequisites and co-requisites	No requirements											
Assessment methods and criteria	<table border="1" data-bbox="448 1093 1477 1205"> <thead> <tr> <th data-bbox="448 1093 794 1137">Subject passing criteria</th> <th data-bbox="794 1093 1141 1137">Passing threshold</th> <th data-bbox="1141 1093 1477 1137">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 1137 794 1171">Exam</td> <td data-bbox="794 1137 1141 1171">60.0%</td> <td data-bbox="1141 1137 1477 1171">50.0%</td> </tr> <tr> <td data-bbox="448 1171 794 1205">Reports</td> <td data-bbox="794 1171 1141 1205">60.0%</td> <td data-bbox="1141 1171 1477 1205">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Exam	60.0%	50.0%	Reports	60.0%	50.0%
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Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>Goczyła, K. (2011) <i>Ontologie W Systemach Informatycznych</i>, Exit</p> <p>Mykowiecka, A (2007) <i>Inżynieria Lingwistyczna</i>, PJWSTK</p> <p>Antoniou, G. (2004) <i>A Semantic Web Primer</i></p> <p>Baader, F. (2003) <i>The description logic handbook: theory, implementation, and applications</i>, Cambridge University Press</p>										
Example issues/ example questions/ tasks being completed	<p>Application of sentiment monitoring tools fondness in brand protection</p> <p>Detection of trends in social networks</p> <p>Semantic data integration</p>											
Work placement	Not applicable											