



Course unit Descriptor	Faculty of Economics Subotica	 UNIVERZITET U NOVOM SADU UNIVERSITY OF NOVI SAD
		
GENERAL INFORMATION		
Study program in which the course unit is offered	Business Information Systems	
Course unit title	Knowledge in Data Discovery - Business Applications	
Course unit code	OASPI17	
Type of course unit ¹	Optional	
Level of course unit ²	Bachelor	
Semester when the course unit is offered	Summer	
Year of study (if applicable)	4 th	
Number of ECTS allocated	6	
Name of lecturer/lecturers	Zita Bosnjak, Olivera Grljevic	
Mode of course unit delivery ³	Face-to-Face	
Course unit pre-requisites (if any)	1) Web Mining or 2) Social Media Content Mining	
PURPOSE AND OVERVIEW (max 5-10 sentences)		
To enable students to recognize the possibilities for analytical modeling of business data using intelligent approaches; to be able to conduct all the steps in CRISP-DM methodology: preprocess the data for analysis, apply an adequate mix of data mining techniques and algorithms for extraction of hidden knowledge, to evaluate the developed data models; to independently conduct the knowledge-in-data-discovery process and to deploy the developed models in a real world environment.		
LEARNING OUTCOMES (knowledge and skills)		
The student understands the knowledge in data discovery (KDD) and data mining (DM) concepts' nature and benefit for a business; understands and applies CRISP-DM methodology during analytical modeling; (s)he is able to assess the quality of "raw" data and prepare the data for DM analysis through aggregation, sampling, dimensional reduction, and other forms of transformation; (s)he can build a classification and regression model, a predictive time-series analysis model, detect repetitive data sequences, and perform cluster analysis in some DM tool; (s)he can evaluate the extracted knowledge and interpret the results obtained.		

¹ Compulsory, optional

² First, second or third cycle (Bachelor, Master's, Doctoral)

³ Face-to-face, distance learning, etc.

SYLLABUS (outline and summary of topics)**Theory**

*Understanding the concepts of knowledge in data discovery and data mining; their purpose and benefits;
CRISP-DM data analysis methodology;
Criteria for selecting appropriate methods and procedures for extracting knowledge from large datasets;
Diversified techniques and methods of knowledge extraction from large collections of data in the business environment;
Building classification, predictive and regression data models, discovering association rules, and clustering.*

Practice

Analytical modelling of different data collections in some commercially available intelligent data analysis tool.

LEARNING AND TEACHING (planned learning activities and teaching methods)

lectures, discussions, case studies, exercises in a computer laboratory

REQUIRED READING

Selected chapters from:

1. Provost, F., Fawcett, T. (2013) Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking, 1st Edition, O'Reilly Media Inc.,
2. Nisbet R., Elder R., Miner G. (2009) Handbook of Statistical Analysis and Data Mining Applications, Academic Press,
3. Aggarwal, C. C. (2015) Data Mining: The Textbook, Springer

ASSESSMENT METHODS AND CRITERIA

Preliminary exam – 20 points, Oral exam – 40 points, Homework – 10 points, Project presentation – 30 points

LANGUAGE OF INSTRUCTION

English