Table 5.2. Course specification

Study program : Advanced Data Analytics in Business	
Course title: Business Cases	
Teachers: Aleksandra Marcikic Horvat, Otilija Sedlak	
Status of the course: Obligatory	
Number of ECTS: 7	
Condition: No	

Goal of the course

The aim of this course is to provide students with the necessary knowledge regarding practical application of data science. The idea is to support problem-based learning using real-life examples of practical application of data science in various areas of business. The course also includes research-based case studies that address current topics and critical issues in data science.

Learning outcome

Ability of students to recognize different areas of application of methods and models of data science in practice, in order to provide support in economic decision-making processes: making financial decisions by applying data science; making marketing decisions by applying data science; decision making process management by applying data science; decision making in health management using data science; decision making in agricultural production using data science.

Content of the course

Theoretical part

1. *Introduction to the practical application of data science in business.*
2. *Development of critical thinking about data and modeling.*
3. *Optimization models.*
4. *Multicriteria decision making.*
5. *Multi-attribute decision making.*
6. *Decision making in conditions of uncertainty.*
7. *Decision making in risk conditions.*
8. *Practical examples of the application of data science in finance.*
9. *Practical examples of the application of data science in supply chain management.*
10. *Practical examples of the application of data science in inventory management.*
11. *Practical examples of the application of data science in marketing.*
12. *Practical examples of application of data science in business informatics.*
13. *Practical examples of the application of data science in the management of industrial processes.*
14. *Practical examples of the application of data science in health management.*
15. *Practical examples of the application of data science in agriculture.*

Practical part

Computer solution of case studies with the structured packages: LINDO / LINGO, EXCEL. Practical part of teaching will be in computer labs for solving and analyzing the solutions. Applications of mathematical methods and models in decision making in business.

Literature

1. Kaldero, N., Data Science for Executives, Lioncrest Publishing, 2018
2. Wisniewski, M., Quantitative Methods for Decision Makers, Pearson Education Limited, 2016.
3. Foreman, J. Data Smart: Using Data Science to Transform Information into Insight, John Wiley & Sons, Indianapolis, USA, 2014
4. Winston, W.L., Practical Management Science, South-Western, Cengage learning, 2012.

Number of hours of active teaching	**Theoretical teaching:2**	**Practical teaching:3**

Teaching methods

Teaching will be done in classrooms, computer labs using appropriate teaching resources (multimedia presentations, software packages, etc.). Teaching takes place through lectures, exercises and independent work. Proof of knowledge is done through written and oral exams.

Assessment (maximum number of points 100)

Pre-exam obligations	Points	Final exam	Points
Activities during semester	5	Written exam	*15*
Practical part	5	Oral exam	*15*
Colloquiums (2 times 20 points)	40	....	
Seminar paper	20		

Pre-exam obligations	Points	Final exam	Points
Activities during semester	5	Written exam	*15*
Practical part	5	Oral exam	*15*
Colloquiums (2 times 20 points)	40	....	
Seminar paper	20		