Table 5.2. Course specification

Study program: Advanced Data Analytics in Business
Course title: Social Media Analytics
Teachers: Grljević B. Olivera
Status of the course: Obligatory
Number of ECTS: 7
Condition: None

Goal of the course

To familiarize students with a) social media sites as the data sources for business analytics, b) the power and significance of user-generated content, and c) various possibilities of analysis of social media content which allows companies to observe the overall market position of a company, product, or competition. To teach students to obtain relevant data from the Internet, to retrieve them and visualize them, to analyse textual content from social media, as well as the emotions from user-generated content from social media.

Learning outcome

Student has the knowledge to to solve complex problems which require application of categorization and clustering of texts, topic modelling, and sentiment analysis; Student has the knowledge to select adequate data source and to retrieve the data from the Internet; Student has the knowledge to create dataset and to prepare it for analysis; Student knows to visualize data (graphical representation of large amount of data, word clouds, and similar); Student knows how to choose an adequate approach to analyze data and to practically apply clustering, classification techniques, association rules on data from the Internet; Student knows to interpret obtained results.

Content of the course

Theoretical part

1.Understanding business benefits of social media analysis and analysis of data obtained from the Internet.

2.Introduction to text mining and natural language processing.

3-4.Introduction to specificities of user-generated content and ways to retrieve them.

5.Model and pre-process textual data for analysis.

6-7.Data mining methods and techniques for analysis of textual data.

8. Classification algorithms, clustering, topic modelling and keywords modelling in texts, sentiment analysis.

9.Basics of image mining.

10.Natural language processing and pre-processing of data.

11.Visualization of data.

12. Collecting and creating datasets for machine learning and data mining.

13-14.Application of text classification, sentiment analysis, application of clustering techniques for grouping similar text and keywords.

15.Illustration of possibilities of applying classification algorithms for image analysis.

Practical part

Work on practical tasks, writing of seminar paper on the basis of theoretical topics

Literature

1. Bing Liu, Sentiment analysis and Opinion Mining, Morgan & Claypool Publishers, 2012.
2. Bo Pang, Lillian Lee, Opinion Mining and Sentiment Analysis, Foundations and Trends in Information Retrieval, Vol. 2, Nos 1-2 (2008) 1-135.
3. Daniel Jurafsky i James H. Martin. 2018. Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition.
4. Weiss, M. S, Indurkhya, N., Zhang,T. Fundamentals of Predictive Text Mining, Springer-Verlang, 2010.
5. Ronen Feldman, James Sanger, The Text Mining Handbook – Advanced Approaches in Analysing Unstructured Data, Cambridge University Press, 2013.

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

Teaching methods

lectures, discussions, and practical exercises and work on various case studies in computer laboratories

Assessment (maximum number of points 100)

Pre-exam obligations	Points	Final exam	Points
Activities during semester	**5**	Written exam	
Practical part	**5**	Oral exam	**30**
Colloquiums (three times 20 points)	**60**	....	
Seminar paper			

Pre-exam obligations	Points	Final exam	Points
Activities during semester	**5**	Written exam	
Practical part	**5**	Oral exam	**30**
Colloquiums (three times 20 points)	**60**	....	
Seminar paper			