

COURSE DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Management	
Course ID: FM.KMk/027AM/16	Course title: Marketing Analytics
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course:	
Number of credits: 3	
Recommended semester:	
Educational level:	
Prerequisites:	
Course requirements: Graded essays on given topic during the semester • Association analysis model: 25% • Cross sell model: 25% • Segmentation model: 25% • Use of data mining in marketing: 25% The overall student rating consists of the sum of the percentages for the analyzed analytical models and the quality of the essays. The individual grades of the grading scale are awarded on the basis of the total number of points / points that reflects the degree of completion of the subject. Grading scale: 100 – 91=A/ 90-81=B/ 80-73=C/ 72-66=D/ 65-60=E/ 59-0=Fx	
Learning outcomes: This course introduces basic concepts, tasks, methods, and techniques in data mining. The emphasis is on various data mining problems and their solutions. Students will develop an understanding of the data mining process and issues, learn various techniques for data mining, and apply the techniques in solving data mining problems using data mining tools and systems. Students will also be exposed to a sample of data mining applications.	
Class syllabus: 1. Basic characteristics of marketing analytics Marketing Research and its components. Role and status of marketing analytics in the organization. Customer Life Cycle. 2. Statistical Software Enterprise Miner Introduction to SAS Enterprise Miner software. Basic terms. Data retrieval, fault finding and missing data records, impute and replacement, data cleansing, data standardization. 3. Types of analysis used in marketing analytics Customer segmentation. Cross Sell, Up Sell, Customer Retention and Customer lifetime value. 4. Customer segmentation	

Definitions, basic types of segmentation. Business rules - Profit ranking, RFM (Recency, Frequency, Monetary), Supervised clustering - Decision tree, Unsupervised clustering - K-means clustering. Creating customer segments.

5. Profiling customer segments

Segmentation strategies. A detailed description of each customer group in terms of their socio-demographic profile, purchasing behavior, experience and needs.

6. Cross Sell and Up Sell.

Definition of terms. Basic components of Cross Sell Modeling. Next Best Offer. Analysis of customer potential for sales of products and services. The analysis provides valuable patterns of buying behavior in the form of transparent outputs. Its conclusions are used in referral systems, when compiling promotional packages, determining the content of promotional catalogs, and especially targeting marketing campaigns to existing customers.

7. Association analysis

Using association analysis (shopping cart analysis) to identify the Next Best Offer. Model results in managing campaigns.

8. Sequence analysis

Using sequential analysis to identify Next Best Offer. Sequence analysis also uses a variable to capture information about the order of product purchase by individual customers. The result is two to multi-element rules that show the sequence of purchases. Using modeling results in managing campaigns.

9. Propensity to Buy

Basic principles of predictive modeling. Practical example of modeling propensity to purchase and interpretation of results. Utilizing modeling results in managing campaigns.

10. Customer Retention

Definitions. Customer retention and profitability of the organization. Fundamental retention strategy for the organization. Analysis of the retention factors. Modeling propensity to leave.

11. Modelling customer retention and fraud detection

Which customers will leave next month? Using modeling results to manage the campaigns. Fraud processing. Detection and prevention of fraud in various areas of business (insurance fraud, tax cuts, employee fraud).

12. Customer lifetime value (CLV).

Definition of terms. Basic approaches to calculating the lifetime value of the customer: a) Coverage (sales minus variable costs). b) Marketing and other costs not included in the coverage. c) Probability of purchase over a given time period. Each of these indicators needs to be modeled on the basis of historical trends and predictive indicators.

13. Utilizing CLV in marketing

The CLV expresses true financial value of customers, enables customer segmentation and segmentation according to their financial potential and the subsequent prioritization of customers and resources. The data will help in deciding: To which existing and potential customers do we invest more and into which less? How to redirect resources? What steps to take to maintain a customer who wants leave our company and go to competition? How to increase customers' profitability?

14. Final class

Each student will get the task to create specific model which was explained during the semester. The evaluation will be based on model quality and explanation of its use for marketing purposes.

Recommended literature:

- [1] PARR RUD, O. 2013. Data mining. Praha: Computer Press, 2013. 370 s. ISBN 8072265776
- [2] KEE HO, W. - LUAN, X. 2003. Data mining. North Carolina: University of North Carolina at Chapel Hill [online]. Dostupné z:

<http://www.unc.edu/~xluan/258/datamining.html#history>
 [3] GHANI, R. 2010. Data mining for business applications. Amsterdam: IOS Press, 2010.
 [online]. Dostupné z: <http://site.ebrary.com/lib/uniba/Doc?id=10440450>
 [4] SAS. 2017. Enterprise Miner Tutorial. 2017. [online]. Dostupné z: http://video.sas.com/#category/videos/sas-enterprise-miner_
 [5] SAS. 2017. Analytics in action. 2017. [online]. Dostupné z: <http://video.sas.com/#category/videos/analytics-in-action>
 [6] SAS. 2017. Customer intelligence. 2017. [online]. Dostupné z: http://video.sas.com/detail/videos/trending/video/4059012552001/sas®-enterprise-miner™---pattern-recognition-demo?autoStart=true#category/videos/customer-intelligence_

Languages necessary to complete the course:

English

Ethics:

The syllabus lists knowledge, skills, competences and transferable skills that the students will acquire by successfully completing the course. These will impact on their personal development and can be used both in their future careers and in their lives as active citizens in democratic societies.

Following the provisions of Internal Regulation of the Comenius University Bratislava - Internal system of ensuring the quality of higher education of the Comenius University Bratislava, *each student consistently achieves his/her study results honestly during his/her studies; does not cheat or use dishonest procedures during any form of verification of his study knowledge and knowledge.* Cases of violation of this provision can be assessed as a violation of obligations arising from legal regulations (...). Such an assessment may be associated with applying relevant legal consequences on an academic, (...) or disciplinary level.

Following the provisions of Internal Regulation of the Comenius University Bratislava - Disciplinary regulations of the Comenius University Bratislava for students, *a student's disciplinary offence is any form of writing off or illegal cooperation or hinting during the written or oral evaluation of study results (knowledge verification) or during preparation for it within the course, or the use of technical devices or any information carriers in a way other than permitted during the written or oral evaluation of study results (knowledge verification) or during preparation for it within the subject.* Some of the disciplinary measures may be imposed on the student for a committed disciplinary offence: reprimand, conditional expulsion from studies or expulsion from studies.

Notes:

Past grade distribution

Total number of evaluated students: 100

Hodnotenie predmetu sa zobrazí až v prípade zaradenia predmetu do nejakého študijného plánu.

Lecturers: Mgr. Lucia Vilčeková, PhD.

Last change: 14.04.2026

Approved by: