

COURSE DESCRIPTION

University: Comenius University Bratislava	
Faculty: Faculty of Management	
Course ID: FM.KIS/372AB/21	Course title: Data Analysis for Management
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning	
Number of credits: 3	
Recommended semester: 4.	
Educational level: I., II.	
Prerequisites:	
Course requirements: - active participation during seminars in solving problems and assignments - elaboration and submission of assignments on time - delays will be penalized - preparation and submission of the final report on time - delays will be penalized Scale of assessment (preliminary/final): - 13% active participation in work at seminars- 60% work with data on assignments during the semester- 27% final report	
Learning outcomes: Business Data Scientist <ul style="list-style-type: none"> ● Analyzes data using various tools ● Solve problems by using modeling techniques ● Designs, builds and maintains data and analytical infrastructure ● Creates sophisticated analytical models ● Derives comprehensively acquired data outputs for client information and facilitation his business decision ● Skills: data extraction, data transformation, data retrieval, dynamic data analysis, machine learning, Big Data, SQL, R, Python and many more. 	
Class syllabus: <ol style="list-style-type: none"> 1. What does the real database looks like and what does the stored real data look like? (Introduction to SQL structures. Basic commands (Select, Where, Order By, ...). Data types. Keys.) 2. How to extract the necessary data from the database for further analysis? (Join, Inner Join, Union, ...) 3. How to save hours with demanding databases when downloading and analyzing data via SQL? (Efficient code writing in SQL. Window Function.) 4. Summary of knowledge (Practicing previous tasks. Indexing.) 5. How to use R language, one of the most used languages by data analysts? (Introduction to R. Library Variables. Fields. Data Frames. Features. For cycle. If.) 6. How to perform an initial descriptive and exploratory analysis of the data set? (Basic statistical measures (mean, variance, quantiles). Graphs (histogram, boxplot).) 7. How to verify and test hypotheses in R language (part 1)? (Statistical induction. Testing of statistical hypothesis. Parametric tests.) 	

8. How to verify and test hypotheses in R language (part 2)? (Statistical induction. Testing of statistical hypothesis. Nonparametric tests.)
9. How do I find out the basic relationships and connections between the variables of a data set? (Correlation and association analysis. Covariance. Correlation and correlation coefficients. Chi-square test, measures associations)
10. How do I find the relationship between two / more independent / dependent groups of a data file? (F-test, t-test and ANOVA - parametric / non-parametric.)
11. How do I detect more complex relationships in the data and make a prediction? (Regression models - linear / logistic. Simple and multiple linear / logistic model. Least squares method.)
12. How do I identify a trend in the data? (Analysis of time series. Decomposition of time series into components. Trend determination.)
13. How to use the acquired knowledge in the increasingly used Python language?

Recommended literature:

Languages necessary to complete the course:

english

Notes:

Past grade distribution

Total number of evaluated students: 0

A	ABS	B	C	D	E	FX	M
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Lecturers: Ing. Rastislav Kulhánek, PhD.

Last change: 11.10.2021

Approved by: