Předmět: **Name in Czech**
               Introduction to Business Analytics with R

Description: Course contents includes the basics of R, pre-processing and data visualization techniques, study and application of linear, non-linear models, and basic panel data models. Students will apply and analyse the results using the R software. The student will prepare and present both in oral and written form a research project in which the concepts studied will be discussed and applied to a concrete problem.

Rozsah: 2+1 (X kreditů)

Osnova PŘ:

1. Getting R started: Downloading R, R version, Installing
2. The R Environment: Command line, and R studio
3. R packages: installing packages, loading packages
4. Basics of R: basic math, variables, missing data, vectors
5. Types of data: data frames, matrices, lists, and arrays
6. Reading data into R: Reading CSV files, reading Excel data, reading other datasets (Stata, and SPSS)
7. Basic graphs in R: the use of plot function
8. Advanced graphs using ggplot
9. Basic statistics: Summary statistics, covariance and correlation
10. Linear Models: Simple and multiple regression models
11. Generalized linear models: logistic models
12. Count data models: negative binomial and poisson models
13. Introduction to panel data: fixed and random effects models
14. Creating reports using R: The knitr command with R markdown
15. R project (students presentations)
16. R project (students presentations)

Osnova CV:

1. xxx
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8. xxx
9. xxx
10. xxx
11. xxx
12. xxx
13. xxx
14. xxx

*Textbooks***:**

- **Course notes**
- **J. Verzani (2002). Using R for introductory statistics. Available at https://cran.r-project.org/doc/contrib/Verzani-SimpleR.pdf**
- **James, G., Witten, D., Hastie, T., Tibshirani, R. (2012). An introduction to Statistical Learning with applications in R. Springer. 2nd edition. Available at http://www-stat.stanford.edu/~tibs/**

- **R for everyone: Advanced Analytics and Graphics. Jared. P Lander. Adison Wesley**