

Kaposvári Egyetem Gazdaságtudományi Kar  
Kaposvár, Guba Sándor u. 40.

## ***EDUCATIONAL THEMATICS***

***Course: Quantitative analysis***

***Course code: 3BMAF1QUA00000***

***Graduate level: MSc course***

***Number of class :0+4***

***Grading: practical course mark***

***Name of the course leader: Dr. György Kövér***

***Name of the lecturer, seminar leader Dr. György Kövér***

***Department: Department of Mathematics and Physics***

***Head of the department: Dr. Eleonóra Stettner, Associante Professor***

***Academic year: 2015/2016. I. semester***

### ***Detailed course description***

The course introduces essential quantitative methods required to analyze economical and sociological problems. Earlier studies of mathematics (analysis, probability calculus, statistics, operational research, etc) may prove useful.

The practical work will be based on computer program packages like gretl (<http://gretl.sourceforge.net/>) and R (<http://cran.r-project.org/>).

### ***Grading:***

The course ends with a practical course mark. The result of two classroom and one home assignment solved by the students will create the practical course mark in 25-25-50% ratio.

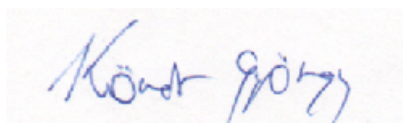
**Topics:**

| WEEK. | FORM            | LECTURE TOPIC | SEMINAR TOPIC   |
|-------|-----------------|---------------|---|
| 1.    | lecture seminar |               | Multiple linear regression  |
| 2.    | lecture seminar |               | Model selection methods   |
| 3.    | lecture seminar |               | Multicollinearity..   |
| 4.    | lecture seminar |               | Heteroscedasticity.   |
| 5.    | lecture seminar |               | Nonlinear models. Lin-log, log-lin és log-log models. Reciprocal and polinomial models. |
| 6.    | lecture seminar |               | Qualitative variables.  |
| 7.    | lecture seminar |               | Probit and logit model.   |
| 8.    | lecture seminar |               | Simultaneous models.  |
| 9.    | lecture seminar |               | Autocorrelation Lagged models.  |
| 10.   | lecture seminar |               | Time series   |
| 11.   | lecture seminar |               | Box-Jenkin's ARIMA models   |
| 13.   | lecture seminar |               | Time series cross-sectional data  |
| 14.   | lecture seminar |               | Time series case studies.   |

**Readings:**

- Ramanathan, R. : Introductory Econometrics with Applications Harcourt College, 2002
- Sydsaeter-Hammond: Mathematics for Economic Analysis, Prentice Hall 1995
- Naresh K. Malhotra: Marketing research. (2010) Pearson
- Everitt, Brian, Hothorn, Torsten: An Introduction to Applied Multivariate Analysis with R (2011) Springer

Kaposvár, 25th August 2015



*lecturer*



*Head of the department*