

COURSE DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Management	
Course ID: FM.KEF/279AM/24	Course title: Modeling of Economic Processes
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course:	
Number of credits: 7	
Recommended semester:	
Educational level:	
Prerequisites:	
Course requirements: Course evaluation during the semester: 2 written test in the middle and at the end of the semester for 20 points (max. 40 points). The test can be taken in an alternate time during the semester, if the student proves his / her absence by a medicine confirmation. According to the University Act, a student can have max 2 absences. Next absence will be evaluated by -1 point in the final assessment. Assessment of the subject during the Examinations period: The final written exam (100 minutes). Students will work on assigned tasks for the specified time data. (max. 60 points) Examination: the student can take 1 regular and one resid term. The student passes the subject if he/she gets at least 24 points from the interim assessments and at least 36 points from the exam. The points that the student gets during the semester and from the exam are included in the final grade for the subject. Scale of assessment (preliminary/final): 40/60	
Learning outcomes: The course provides a basic introduction to modern time series analysis. We will cover time series regression and exploratory data analysis, ARMA/ARIMA models, model identification / estimation /linear operators' models. Moreover, the using of the linear regression models in economy will be introduced. The analyses will be performed using Wolfram Mathematica or R-software. By completing the course, the student will be able to analyze the problems of the time series and to model selected economic problems. Course objectives are to learn basic analysis of time series data; learn basic concepts in time series regression; learn auto - regressive and model averaging models; learn basic concepts of economic regression models. Students gain the experience with some managerial applications of various econometric methods and with some applications in economy.	
Class syllabus:	

Simple linear regression model. Multiple regression model. Linear regression models in economy and in time series analysis. Time series and their statistical characteristics. Linear time series analysis: Analysis of the trend and seasonal component with applications. Stationary and nonstationary processes. Unit root tests. ARIMA models - Box-Jenkins methodology. ACF, PACF to discover ARMA orders. Choice of the model using R-Square, AIC, BIC. Analysis of error term, white noise. Prediction of the time series values.

Recommended literature:

BOHDALOVÁ, M., 2026: Online study materials available at: <https://moodle.uniba.sk/course/view.php?id=3085>

CIPRA, T. 2020. Time Series in Economics and Finance. Springer: Prague, 2020. 409 p., ISBN 978-3-030-46346-5

GUJARATI, D. N., PORTER, D. C., 2009: Basic Econometrics. McGraw-Hill International Edition.

VERCELIS, C., 2009: Business Intelligence: Data Mining and Optimization for Decision Making. John Wiley & Sons Ltd. (chapters 4-9)

RUEY S. TSAY, 2010: Analysis of Financial Time Series. John Wiley & Sons, Inc., ISBN 978-0-470-41435-4

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:

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Past grade distribution

Total number of evaluated students: 40

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

Lecturers: doc. RNDr. Mária Bohdalová, PhD., Ing. Tengizi Mtchedlidze

Last change: 13.04.2026
Approved by: