

COURSE DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Management	
Course ID: FM.KEF/071AB/24	Course title: Mathematics I
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: 5	
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. Assessment of the subject during the Examinations period: The final written exam (80 minutes), consists of 5 examples (2 from linear algebra and 3 from mathematical analysis). (max. 60 points) Exam: a student can complete 1 regular and one corrective term if he / she does not reach the required number of points to complete the course on the regular term. The student completes the course if he / she obtains at least 60% of points (ie 30 points) from the continuous assessment, so that he / she can go to the exam and min. 60% of the exam points (ie 30 points) to pass the exam. The points that the student obtains during the semester and in the exam are included in the final grade of the subject. Scale of assessment (preliminary/final): 40/60	
Learning outcomes:	
Class syllabus: 1. Linear algebra: vectors and matrices. n-dimensional vectors and matrices: Vector and Matrices Operations, linear dependence and independence. Matrices: transposes and inverse matrix, singular, regular matrices, rank of matrices, determinants, their basic properties. Solution of the system linear equations (Gauss Elimination Method, Cramer`s Rule). Matrices as Linear Transformations, Eigenvalue, Eigenvectors. Application to Market, Leontief Input-Output Models. 2. Calculus of the Function of One Variable. Concept of Limit, Continuity and Differentiability of a Function of One Variable. Rules of Differentiation for a Function of One Variable. L'Hospital Rule. Differentials. Taylor Serries. Extreme Values of a Function of One Variable. Integral Calculus: Indefinite Integrals: Basic rules of Integration, Substitution method, Integration per partes. Definite Integrals.	

Some economical applications.
Recommended literature: [1] KNOR, M.: Mathematics for Managers I, Univerzita Komenského, Bratislava, 2003. [2] BERGIN, J. 2015. Mathematics for Economists with Applications. London and New York : Routledge, Taylor and Francis Group, 2015. ISBN 978-04-156-3828-9 [3] CHIANG, A. C. 1984. Fundamentals Methods of Mathematical Economics. Singapore : McGraw-Hill, 1984. ISBN 00-706-6219-3 [4] RENSHAW, G. 2009. Maths for Economics. Oxford : Oxford University Press, 2009. ISBN 978-01-992-3681-7 [5] SYDSAETER, K. – HAMMOND, P. 2008. Essential Mathematics for Economic Analysis. Boston : Prentice Hall. 2008. ISBN 978-02-737-6068-9 [6] VINOGRADOV, V .V. 2010. Mathematics for Economists Made Simple. Praha : Karolinum Press, 2010. ISBN 978-80-246-1657-5 [7] WERNER, F. – SOTSKOV, Y. N. 2006. Mathematics of Economics and Business. New York : Routledge, Taylor and Francis Group, 2006. ISBN 978-04-153-3281-1 [8] WINSTON, W.L.: Operation research, PWS-KENT Publishing Company, Belmont, California, 1991.
Languages necessary to complete the course:
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, <i>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.</i> 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, <i>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.</i> 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: 180
Hodnotenie predmetu sa zobrazí až v prípade zaradenia predmetu do nejakého študijného plánu.
Lecturers: Mgr. Lukáš Kurinec, PhD., doc. Ing. Mgr. Urban Kováč, PhD., prof. Deniz Ünal Özpalamutcu, PhD.
Last change: 01.06.2024

Approved by: