

COURSE DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Management	
Course ID: FM.KEF/072AB/24	Course title: Mathematics II
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: 1.) 1 written test in the at the end of the semester for 30 points. The test can be taken in an alternate time during the semester, if the student proves his / her absence by a medicine confirmation. 2.) Students can earn 10 points for participating in activities and attending tutorials and lectures throughout the semester. 3.) According to the Uiversity Act, a student can have max 2 absences (one on theoretical and one on practical exercises). Next absence will be evaluated by -1 point in the final assessment of each type of exercise. Assessment of the subject during the Examinations period: The final written exam, which lasts for 100 minutes, consists of 5 exercises, each worth 12 points, totalling 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 24 points) from the continuous assessment, so that he / she can go to the exam and min. 60% of the exam points (ie 36 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): 50/50	
Learning outcomes: This course follow course Mathematics I and gives to students the possibility to gain mathematical skills in solving optimization problems. In many economic applications, a manager deals with situations where several variables have to be included into the mathematical model, e.g. usually the output depends on a set of different input factors. Therefore, this course deals with optimization problems for functions depending on more than one independent variable.	
Class syllabus: Functions of several variables: partial derivatives, gradient, total differential, competitive and complementary products.	

Unconstrained and constrained optimization: optimality conditions, Lagrange multipliers, Kuhn-Tucker conditions. Linear programming: simplex methods, duality, sensitivity analysis. Integer linear programming.
Recommended literature: 1. Knor, M.: Mathematics for Managers II, Univerzita Komenského, Bratislava, 2003. 2. Winston, W. L. 2004. Operations Research. Applications and Algorithms. Belmont: Thomson. Brooks/Cole. 2004. ISBN 0-534-52020-0 3. Chiang, A.C.: Fundamentals Methods of Mathematical Economics. McGraw-Hill International Editions., Singapore , 1984 4. Werner, F. – Sotskov, Y. N.: Mathematics of Economics and Business
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, <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: 65
Hodnotenie predmetu sa zobrazí až v prípade zaradenia predmetu do nejakého študijného plánu.
Lecturers: doc. RNDr. Mária Bohdalová, PhD., prof. Deniz Ünal Özpalamutcu, PhD., Mgr. Tomáš Bohumel
Last change: 01.06.2024
Approved by: