Information sheet for the course
Mathematics II.

University: *Alexander Dubček University of Trenčín*	
Faculty: *Faculty of Social and Economics Relations*	
Course unit code: *VSP10*	**Course unit title:** *Mathematics II.*
Type of course unit: *compulsory*	

Planned types, learning activities and teaching methods: *2 hours of lectures / 2 hours of seminars per week. 28 hours of lectures / 28 hours of seminars per week. In-class format.*

Number of credits: *4*

Recommended semester: *2nd*

Degree of study: *I.*

Course prerequisites: *Mathematics I*

Assesment methods:
During the semester there will be two written assessment work with minimum of 50% and active participation in seminars. By 50% of absence the conditions are not met to take the exam (attendance randomly). Rating A: 90-100%. Rating B: 80-89%. Rating C: 70-79%. Rating D: 60-69%. Rating E: 50-59%. Rating FX: less than 50%. During the semester to exam a student can get 8 bonus points (first written work 3 points, second written work 3 points, 1 point for 100% attendance at lectures (presence randomly), 1 point for 100% participation. At the end of semester: Exam. Resulting rating: achieved average.

Learning outcomes of the course unit:
After finishing the course, a student will have acquired knowledge of linear algebra, integral calculus and functions of n - variables (two variables). The student will be able to solve systems of linear equations using matrices and determinants. The student will understand and solve the tasks of integral calculus, thus calculate the area bounded by the curves and calculate the length of the curve. After obtaining knowledge of the functions of n variables (two variables) the student will be able to make and resolve tasks that lead to the solution of practical tasks applications in technical subjects.

Course contents:
1. Polynomials and algebraic equations.
2. The concept of the vector in the plane and in space. Linear combination of vectors, linear dependence and independence of vectors.
3. The concept of matrix, basic types of matrices, operations with matrices.
4. The rank of a matrix, inverse matrix.
5. The concept of determinant, properties determinant under 1, 2, and level 3. Calculating the determinant development by row or column.
6. The system of linear equations. Frobenius theorem. Solving systems of linear equations (Gauss elimination method, by solving the inverse matrix and Cramer's rule).
7. The notion of primitive functions, indefinite integral, basic formulas.
8. The integration by per partes, integration by the substitution method.
9. Definite integral, methods for calculating the definite integral.
10. Decomposition of rational functions in partial fractions. Solution vague and definite integrals of rational functions. Applications of the definite integral.
11. Function of n-real variables (two variables). Limit, continuity nreálnych variables (two variables).
12. Partial functions and partial derivatives of functions of two variables.
13. Local extremes, extremes overall function of two variables.

Recommended of required reading:

Hricišáková, D.: Matematika – A. TnUAD, FSEV, Trenčín 2011 *Petrušová, D. – Rybičková, L.: Matematika II. Zbierka úloh. TnUAD, Trenčín 2011* *Hricišáková, D.: Podklady, príklady a testy na prijím. pohovory na AR.2008/2009 z ekonómie,* *ekonomiky, matematiky a CJ. (časť Matematika.). TnUAD, FSEV, Trenčín 2007* *Hricišáková, D. a kol.: Matematika I. TnUAD ÚPHV, Katedra matematiky, Púchov 2001* *http://elearning.tnuni.sk/course/view.php?id- 20□*

Language: *Slovak*

Remarks:
Subject is offered in the summer semester of the first year of full-time studies and external studies. This course is mandatory. The number of students in a seminar group ranges from 20 to 25 students.

Evaluation history:

Total number of students being assessed: *583*

A	B	C	D	E	FX
2.06	1.03	10.81	5.32	46.66	34.13

Lectures: *doc. RNDr. Daniela Hricišáková, CSc., RNDr. Magdaléna Tomanová, Ing. RNDr. Dagmar Petrušová, PhD.*

Last modification:

Supervisor: *doc. Ing. Ján Kútik, CSc.*