No. 5

Course syllabus for First cycle studies					
1.	**Course title**	Mathematics 2			
2.	**Code**	FTM2M1			
3.	**Study Program**	Clothing Design and Engineering			
4.	**Study program organizer (unit, institute, department, division)**	Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje			
5.	**Degree (first, second, third cycle)**	First			
6.	**Academic year/semester**	First Year / Second Semester	7.	**Number of ECTS**	7
8.	**Instructors**	Prof. Dr. Beti Andonovikj, responsible professor Prof. Dr. Pavel Dimovski			
9.	**Prerequisites for course enrollment**	None			
10.	**Objectives of the course syllabus (competencies):** The course aims to help students gain the necessary knowledge of vector algebra, analytic geometry in space, functions of several variables, partial derivatives, double integrals, and differential equations, which make up the mathematical apparatus of most engineering subjects. **Acquired skills (competencies):** Basic knowledge of Mathematics 1.				
11.	**Content of the course:** Determinants of the second and third order and their application in solving systems of linear equations. Vectors in space, operations with vectors (scalar, vector and mixed product). Plane in space, lines in space and their mutual relationship. Geometric meaning of determinants of the second and third order. Matrices, properties of matrices, matrix operations, inverse matrix and solving systems of linear equations using matrices. Functions of several variables and graphical representation of some functions of two variables. Partial derivatives of first and higher order, tangent plane, and normal to a surface, total differential, and extreme values. Double integral in Cartesian, polar coordinates, and application of double integral (volume of a body and surface area). Differential equations of first order, some special equations of second order, and linear differential equations of higher order with constant coefficients.				
12.	**Study methods:** Lectures and exercises, consultations, homework assignments, and independent study.				
13.	**Total available time**	240			
14.	**Allocation of available time**				

15.	**Teaching activities**	15.1.	Lectures - Theoretical Instruction:	45 hours
		15.2.	**Exercises (Laboratory, Tutorials), Seminars, Teamwork:**	45 hours
15		15.3	Practical Work:	0 hours
16.	**Other types of activities**	16.1.	Project Assignments:	0 hours
		16.2.	Independent Assignments:	30 hours
		16.3.	Homework:	120 hours
17.	**Grading system**			
	17.1.	Tests (Points):		90
	17.2.	Seminar Work/Project, Written and Oral Presentation (Points):		10
	17.3.	Final Exam (Points):		0
18.	**Grading criteria (points/grade)**	Up to 61 points		5 (five) (F)
		From 61 to 69 points		6 (six) (E)
		From 70 to 79 points		7 (seven) (D)
		from 80 to 89 points		8 (eight) (S)
		From 90 to 95 points		9 (nine) (B)
		from 95 to 100 points		10 (ten) (A)
19.	**Prerequisites for taking the final exam**	Attended the course		
20.	**Language in which lectures are conducted**	English		
21.	**Method for monitoring the quality of lectures**	Self-evaluation, questionnaires		

22. **LITERATURE**

22.1. Compulsory literature

No.	Author	Title	Publisher	Year
1.	Howard Anton, Irl C. Bivens, Stephen	Calculus: Multivariable, 12th Edition	Wiley	1992
2.				
3.				

22.2. Additional literature

No.	Author	Title	Publisher	Year
1.	G. James	Mathematics for Modern Engineering	Pearson	2020
2.				
3.				