UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION			
Study Program	Mechanical Engineering		
Study Module (if applicable)	-		
Course Title	Mathematics 2		
Level of Study	☒Bachelor	☐ Master's	☐ Doctoral
Type of Course	☒ Obligatory	☐ Elective	
Semester	☐ Autumn	☒Spring	
Year of Study	I		
Number of ECTS Allocated	7		
Name of Lecturer/Lecturers	MelanijaMitrović, Ljiljana Radović		
Teaching Mode	☒ Lectures	☒Group tutorials	☒ Individual tutorials
	☐ Laboratory work	☐Project work	☐ Seminar
	☐ Distance learning	☐ Blended learning	☐ Other

Purpose and Overview (max. 5 sentences)

The aim of the course is to introduce students to the basics of the multivariable calculus. Students acquire knowledge of the Mathematics 1. Although multivariable calculus can be seen as the extension of calculus in one variable to calculus in more than one variable, many counter-intuitive results not demonstrated by single-variable functions appear. For example: study of f limits and continuity, partial derivatives of a multivariable function, double and triple integrals, line integrals, etc. Taking into account facts that, multivariable functions of real variables arise unavoidably in engineering and physics, the course is targeting both the theoretical and practical aspects of the topics.

Syllabus (brief outline and summary of topics, max. 10 sentences)

Outline: After completing this course, students should have developed a clear understanding of the fundamental concepts of multivariable calculus and first-order and higher-order differential equations, as well as a range of skills allowing them to work effectively with the concepts.

Summary of topics: 1) Functions of several variables; 2) Multiple integrals; 3) Vector-valued functions; 4) Vector fields; 5) Line integrals; 6) First-order differential equations; 7) Higher-order differential equations.

Language of Instruction

☒Serbian (complete course) ☒ English (complete course) ☐ Other _____ (complete course)

☐Serbian with English mentoring ☐Serbian with other mentoring _____

Assessment Methods and Criteria			
Pre exam Duties	**Points**	**Final Exam**	**Points**
Activity During Lectures	**10**	**Written Examination**	**Max. 60 (depending on Teaching Colloquia)**
Practical Teaching		**Oral Examination**	**Max. 30 (depending on Teaching Colloquia)**
Teaching Colloquia	**90**	**Overall Sum**	**100**
***Final examination mark is formed in accordance with the Institutional documents**			