1.	Course Title	Engineering mathematics
2.	Code	F18L2W104
3.	Study program	Software engineering and information systems
4.	Study Program Organizer	Faculty of Computer Science and Engineering
5.	Degree (first, second, third cycle)	first cycle
6.	Academic year / semester 2 / winter / optional	7. ECTS credits 6
8.	Teacher	associate professor Vesna Dimitrova, assistant professor Vesna Dimitrievska Ristovska
9.	Course enrollment prerequisites	Калкулус 2 или Калкулус
10.	Course program goals (competencies): The course covers methods for numerical solving of many mathematical problems and application of some significant mathematical transformations in engineering.	
11.	Course program content: Numerical mathematics: Approximate numbers: presentation of numbers and operations. Analysis of errors (absolute and relative errors). Rounding an approximate number: exact and significant digits, Approximation of functions, Some examples of errors obtained from elementary functions, Approximately solving nonlinear equations, Numerical methods for solving systems of linear equations, Calculating schemas for polynomials and their applications, Interval of real polynomial roots (Criteria of Lagrange, Newton and Descartes); Mathematical transformations - Complex numbers: definition, properties, modul, argument, Practical applications, Complex functions: types, derivatives. Cauchy-Riemann conditions, Laplace transformation (definition, existence, properties), Inverse Laplace transformation, Practical examples for solving ordinary differential equations with Laplace transformation, Fourier transformations, Fourier series, Fourier integral, Inverse Fourier transformation, Practical examples for finding Fourier transformations of functions.	
12.	Learning methods: Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.	
13.	Total available time	6 ECTS x 30 hours = 180 hours

14.	Distribution of the available time		30 + 45 + 15 + 15 + 75 = 180 hours	
15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours
		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	45 hours
16.	Other activity forms	16.1.	Project Tasks	15 hours
		16.2.	Independent Learning Tasks	15 hours
		16.3.	Home learning	75 hours

17.	Assessment methodology		
	17.1.	Tests	10 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Activity and learning	10 points
	17.4.	Final exam	70 points

18.	Assessment criteria (points/grade)	up to 50 points	5 (five) (F)
		51 to 60 points	6 (six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)
19.	Course completion and final exam requirements	Realized activities 15.1 and 15.2	
20.	Teaching Language	Macedonian and English	
21.	Teaching quality evaluation method	Internal evaluation mechanisms and questionnaires	

22.	Course Material				
	22.1.	Mandatory course material			
		No.	Author	Title	Publisher	Year
		1	Глин Џејмс	Математика на модерен инженеринг	Македонско издание (Арс Ламина)	2009
		2	H.Anton, I.Bivens, S.Davis	Calculus	Jon Wiley &Sons, INC	2002
	22.2.	Additional course material			

No.	Author	Title	Publisher	Year