1.	Course title	Introduction to financial engineering		
2.	Course code	IIS-I-04		
3.	Study program	Master studies in Computer Science and Engineering, modulus Intelligent Information Systems		
4.	Unit offering the course	**FCSE**		
5.	Undergraduate/master/PhD	**Master**		
6.	Year/semester 1/winter/elective	7. ECTS: **6**		
8.	Teacher(s)	Assistant Professor Lasko Basnarkov		
9.	Course prerequisites	None		
10.	Goals (competences): Students will acquire knowledge of the basics of the finance, financial markets and financial derivatives. They will be introduced to some practical problems and the quantitative methods for their solution. Students will understand the basic ideas behind the financial derivatives and portfolio diversification.			
11.	Course content: Fixed-income securities. Option price determination and binomial models. Stochastic differential equation. Black-Scholes equation. Random numbers and Monte Carlo simulations. Option price determination with partial differential equations. Portfolio analysis.			
12.	Teaching methods: Lectures supported by slide presentations, interactive lectures, trainings (using lab equipment and software packages), team work, case studies, invited guests and lectures, individual practical assignments presentations, seminar paper, e-learning (forums, consultations).			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	130 + 0 + 50 = 180 hours		
15.	Teaching activities	15.1.	Lectures	130 hours
		15.2.	Training (labs, problem solving), seminar and team work	0 hours
16.	Other activities	16.1.	Project work	15 hours
		16.2.	Self study	15 hours
		16.3.	Home work	20 hours
17.	Grading			
	17.1.	Tests		65 points
	17.2.	Seminar work/project (written or oral presentation)		25 points
	17.3.	Active participation		10 points
18.	Grading criteria	to 59 points		5 (five) (F)
		from 60 to 68 points		6 (six) (E)
		from 69 to 76 points		7 (seven) (D)
		from 77 to 84 points		8 (eight) (C)
		from 85 to 92 points		9 (nine) (B)
		from 93 to 100 points		10 (ten) (A)

19.	Final exam prerequisites			Successfully completed activities 15.1 and 15.2		
20.	Course language			Macedonian and English		
21.	Quality assurance methods			Internal evaluation and student questionnaires		
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Omur Ugur	An Introduction to Computational Finance	World Scientific Pub Co	2009
		2.	George Levy	Computational Finance Using C and C#	Elsevier	2008
		3.	John C. Hull	Options, Futures and other Derivatives	Prentice Hall	2011
	22.2.	Additional				
		No.	Authors	Title	Publisher	Year
		1.				
		2.				
		3.				