

1.	Course title	Software Engineering		
2.	Course code	CSES403		
3.	Study program	CSE, CE, AET, ASI, IT		
4.	Unit offering the course	<b>FCSE</b>		
5.	Undergraduate/postgraduate/PhD	<b>Undergraduate</b>		
6.	Year/semester	7. ECTS: <b>6</b>		
8.	Teacher(s)	Prof. Katerina Zdravkova, Assoc. Prof. Dejan Gjorgjevikj, Assist. Prof. Boro Jakimovski, Assist. Prof. Gjorgji Madzharov		
9.	Course prerequisites	Structured programming, Object-oriented programming		
10.	Goals (competences): Methodology for designing and implementing software systems through requirement analysis, development and analysis of software design, implementation, integration and software testing; Analysis of a case study for software development; Designing a modular structure of software solution and evaluation of alternatives; Implementation of effective and adequate modules, their integration and testing; Planning and maintenance of software projects.			
11.	Course content: Introduction to Software Engineering; Software properties; Software process models, decomposition, abstraction, object model; Requirements analysis and modelling; Structured and Object-oriented analysis; Formal Specifications; Design and software architectures; Preparation of conceptual, logical and physical software design; Patterns for design, static and dynamic analysis; implementation, documentation and planning; Introduction to testing, functional and systematic testing; Software project management; Analysis of real-life practical case studies.			
12.	Teaching methods: Lectures, training, labs, project assignments, home assignments			
13.	Total available time	6 ECTS * 30 = 180 hours		
14.	Distribution of the available time	30 + 45 + 30 + 35 + 40 = 180		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	30 + 15 hours
16.	Other activities	16.1.	Project work	30 hours
		16.2.	Self study	35 hours
		16.3.	Home work	40 hours
17.	Grading			
	17.1.	Tests		60 points
	17.2.	Practical assessments		30 points
	17.3.	Active participation		10 points
18.	Grading criteria		to 50 points	5 (five) (F)
			from 51 to 60 points	6 (six) (E)

		from 61 to 70 points	7 (seven) (D)		
		from 71 to 80 points	8 (eight) (C)		
		from 81 to 90 points	9 (nine) (B)		
		from 91 to 100 points	10 (ten) (A)		
19.	Final exam prerequisites	Activities 15 and 16			
20.	Course language	Macedonian and English			
21.	Quality assurance methods	Mechanisms for internal evaluation and student polls			
Literature					
22.	Compulsory				
	No.	Authors	Title	Publisher	Year
	1.	Иан Самервил	Софтверско инженерство	Просветно дело	2009
	2.	Roger S Pressman	Software Engineering: A Practitioner's Approach	McGrawHill Education	2010
	3.	Ian Sommerville	Software Engineering, 9 <sup>th</sup> edition	Addison Wesley	2010
	Mandatory				
	No.	Authors	Title	Publisher	Year
	1.	DAAD project consortium	Joint Course in Software Engineering	DAAD project consortium	2013
	2.	Michael E.C. Schmidt	Implementing the IEEE Software Engineering Standards	Sams	2000
	3.	Bernd Bruegge and Allen H. Dutoit	Object-Oriented Software Engineering: Using UML, Patterns, and Java, 2nd Edition	Prentice Hall	2003