

1.	Course title	Visual programming		
2.	Course code			
3.	Study program	Computer Science and Engineering, Informatics and Computer Engineering		
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. Suzana Loshkovska, Assoc. Prof. Dejan Gjorgjevikj, Assist. Prof. Gjorgji Madjarov		
9.	Course prerequisites	Structure programming, Object oriented programming		
10.	<p>Goals (competences):</p> <p>The student will attain knowledge of software development techniques by using modern object-oriented programming language in advanced integrated development environment, designing user interfaces and software debugging. After completing the course, the students will be capable for developing event-driven application, graphical user interfaces, advanced forms for user input, custom user controls and creating installation packages.</p>			
11.	<p>Course content:</p> <p>Development environments. Event-driven programming. Application wizards and forms designers. User controls, event controls, text controls, state controls, list controls, group controls. Generating and handling events. Time generated events. Graphical user interfaces, localization (i10n) and internationalization (i18n). User menus, toolbars and status bars. Custom user controls. Multithreading, resource sharing, inter-process communication. Creating installation packages.</p>			
12.	<p>Teaching methods:</p> <p>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).</p>			
13.	Total available time	6 ECTS x 30 h = 180 h		
14.	Distribution of the available time	30 + 45 + 30 + 35 + 40 = 180 h		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	45 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				70 points
	17.2.	Seminar work/project (written or oral presentation)				20 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		Successful completion of activities 15 and 16			
20.	Course language		Macedonian and English			
21.	Quality assurance methods		Internal evaluation mechanisms supported by student polls			
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Karli Watson, Christian Nagel, Jacob Hammer Pedersen, Jon D. Reid, Morgan Skinner	Beginning Visual C#	Wrox	2010
		2.	Chris Sells	Windows Forms Programming in C#	Addison-Wesley Professional	2004
		3.	Ian Griffiths, Matthew Adams, and Jesse Liberty	Programming C# 4.0: Building Windows, Web, and RIA Applications for the .NET 4.0 Framework	O'Reilly Media	2010
		22.2.	Mandatory			
	No.		Authors	Title	Publisher	Year
	1.		Allen Jones and Adam Freeman	Visual C# 2010 Recipes A Problem-Solution Approach	Apress	2010
	2.		Erik Brown	Windows Forms in Action: Second Edition of Windows Forms Programming with C#	Manning Publications	2006
3.	Matthew A. Stoecker	Windows Application Development with Microsoft .NET Framework 4	Microsoft Press	2011		