1.	Course title	**Special effects and computer video games programming**	
2.	Course code	SI-I-04	
3.	Study program	**Master Studies in Computer Science and Engineering - Software engineering**	
4.	Unit offering the course	**FCSE**	
5.	Undergraduate/master/PhD	**Master**	
6.	Year/semester 1(2)/winter/elective	7. ECTS: **6**	
8.	Teacher(s)	prof. d-r Dragan Mihajlov, assist. prof. d-r Ivan Chorbev	
9.	Course prerequisites	None	
10.	Goals (competences): After completion of the course the candidates are expected to understand the concepts of programming special effects and video games, to develop systems containing special effects as well as to design and develop software for video games.		
11.	Course content: Visual illusions, anatomy and physiology of the human eye, vision, types of geometrical illusions, angles, illusions of depth, distance and colour. Advanced modelling techniques; procedural and fractal model; modelling based on grammars; volume rendering; physics based modelling; special models of natural and synthetic objects. Special effects with images; animation, conventional and computer supported animation; animation of movement and human movement. Steps in game design; hierarchical representation of scenes; human-computer interaction; collision detection; character animation; geometric levels of details; environment design; spatial ordering; special effects; game program structure.		
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	60 + 0 + 120 = 180 hours	
15.	Teaching activities	15.1.	Lectures	60 hours
		15.2.	Training (labs, problem solving), seminar and team work	0 hours
16.	Other activities	16.1.	Project work	45 hours
		16.2.	Self study	45 hours
		16.3.	Home work	30 hours
17.	Grading			
	17.1.	Tests		45 points
	17.2.	Seminar work/project (written or oral presentation)		45 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.	Rollings A., Adams E.	Game Design	New Riders Publishing	2003
2.	Crawford C.	Game Design	New Riders Publishing	2003
3.				

22.2. Additional

No.	Authors	Title	Publisher	Year
1.				
2.				
3.				