

1.	Course	Robotics			
2.	Code	INF-S21			
3.	Study programme	Informatics			
4.	Study programme organized by	Faculty of Computer Science and Engineering			
5.	Cycle	Third - PhD			
6.	Academic year / semester winter/summer/elective	first/second	7.	ECTS credits	6
8.	Teacher	Prof. D-r Nevena Ackovska			
9.	Prerequisites	None			
10.	<p>Course programme goals (competences):</p> <p>The goal of the course is to enable deep research possibilities in the field of robotics, in order for the students to be able to build and program robots for different purposes. Special attention is given to sensing, decision making and action taking. The students will gain knowledge in building and controlling robots, especially in the modern methodology. The use of software tools in the modelling phases is emphasized.</p>				
11.	<p>Course syllabus:</p> <p>The course encourages students to tackle some modern robotics topics including: Autonomous robots. Robot action – kinematics, dynamics, autonomous control, manipulation, movement. Robot perception – different kind of sensors and interpretation of sensor data. Robot's cognition – knowledge representation, planning, task scheduling. Evolutionary robotics. Robotics of the modern society. Human – robot interaction.</p>				
12.	<p>Teaching methods:</p> <p>Classes supported with slide presentations, interactive teaching, lab equipment and other software packages, teamwork, case studies, invited guest lecturers, presentations of project works, e-learning materials, forums and consultations</p>				
13.	Total fund of work hours	7,5 EKTC x 30 h = 225 h			
14.	Available hours distribution	45+30+150 = 225			
15.	Teaching activities	15.1.	Theoretical classes	45 h	
		15.2.	Practical classes (labs, exercises), seminars, team work	30 h	
16.	Other activities	16.1.	Project tasks	50 h	
		16.2.	Self study	50 h	
		16.3.	Homework	50 h	
17.	Grading				
	17.1.	Tests	40 points		
	17.2.	Seminar work/ project (presentation: written and oral)	50 points		
	17.3.	Active participation	10 points		
18.	Grading criteria (points/grade)	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.	Conditions for attending the final exam	Successful completion of activities 15.1 and 15.2	
20.	Language	Macedonian or English	
21.	Quality assessment	Internal evaluation and student pools	

22.	Literature				
	Compulsory				
	No.	Author	Title	Publisher	Year
22.1.	1.	George A. Bekey	Autonomous Robots From Biological Inspiration to Implementation and Control	MIT Press	2005
	2.	S. Nolfi, D. Floreano	Evolutionary Robotics The Biology, Intelligence, and Technology of Self-Organizing Machines	MIT Press	2004
	3.	Michael A. Goodrich, Alan C. Schultz	Human-Robot Interaction: A Survey	Publishers Inc	2008
	Additional				
	No.	Author	Title	Publisher	Year
22.2.	1.	Erwin Prassler	Advances in human-robot interaction	Springer	2005
	2.	Sebastian Thrun, Wolfram Burgard, Dieter Fox	Probabilistic Robotics	MIT press	2006
	3.	Siciliano, Khatib,	Springer Handbook in Robotics	Springer	2008