Course Unit Descriptor

Study Programme: Computer Science	
Course Unit Title: Basics of Agent Technologies	
Course Unit Code: CS606	
Name of Lecturer(s): Mirjana Ivanović	
Type and Level of Studies: Bachelor Academic Degree	
Course Status (compulsory/elective): Elective	
Semester (winter/summer): Winter	
Language of instruction: Serbian (primary), English (secondary)	
Mode of course unit delivery (face-to-face/distance learning): Face-to-face	
Number of ECTS Allocated: 4	
Prerequisites: Object-oriented programming 1	

Course Aims:
The objective of the course is to introduce students to basic but essential notions and concepts of software agents, multiagent systems, programming agents and agent technologies.

Learning Outcomes:
Minimum: Successful students should be capable to understand essential concepts of agent technology and be able to implement simple software agents.
Desirable: At the end of the course it is expected that successful students deeply understand essential concepts of software agents, life-cycle of agents and communication in simple multiagent systems. Also they should be able to implement simple multiagent systems**.**

Syllabus:
Theory
During theoretical clasesto to students will be presented all important concepts of agents technology but on very basic level : 1) basic concepts and principles of computational agency and key issues of both individual agents and agent organizations; 2) communication among agents and agent communication languages, two forms of agent-agent interaction – negotiation and bargaining; argumentation; 3) coordination among agents from different perspectives, including social choice, mechanism design and auctions, coalition formation and trust and reputation; 4) distributed cognition in multiagent systems (MAS): learning, planning and decision making; 5) development and engineering of multiagent systems, programming multiagent systems and specification and verification of MAS.
Practice
Students will concentrate on using appropriate agent platform for implementation agents and MAS. They will implement simple agents and simple MAS.

Required Reading:
1.MULTIAGENT SYSTEMS, edited by Gerhard Weiss, MIT Press, 2013, 2nd edition, ISBN 978-0-262-01889-0

Weekly Contact Hours: 3	**Lectures:** 1	**Practical work:** 2

Teaching Methods:
Theoretical classes are based on the classical teaching model involving a projector and .ppt presentations. At theoretical exercises particular agent platform will be presented and simple design, solutions and implementations of software agents and MAS will be presented. To approach the oral exam students have to pass pre-exam obligations consisting of practical implementation of simple MAS, working in small teams. Three theoretical tests will be conducted during course. At the oral exam students are expected to demonstrate the understanding of the topics covered by the course.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Theoretical tests	15	written exam	
Practical teamwork project	45	oral exam	40
Preliminary exam(s)		…….	
Seminar(s)			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.