

Specification for the book of courses

Study program		Computing and Informatics	
Module		Software Engineering	
Type and level of studies		Master studies	
The name of the course		Intelligent Transportation Systems	
Lecturer (for lectures)		Rančić D. Dejan, Predić B. Bratislav	
Lecturer/associate (for exercises)		Predić B. Bratislav	
Lecturer/associate (for OFE)			
Number of ECTS	4	Course status (obligatory/elective)	Elective
Prerequisites			
Course objectives			
Gaining practical programming skills, theoretical knowledge and systematic approach required for the design, implementation and operation of systems in which information technologies, computers, the Internet, and humans act in concert to achieve results that are characterized as intelligent.			
Course outcomes			
Students are able to identify areas of usage, specific problems and relevant theoretical concepts needed to solve them, possess practical programming skills needed to implement specific examples of usage.			
Course outline			
Theoretical teaching			
Common conceptual foundations: data models, information and knowledge, the basic technologies (Internet, databases, artificial intelligence, information retrieval), business aspects, mathematical basics. Intelligent databases, deductive and active databases, intelligent information retrieval. Web and Intelligent Information Systems: Web 2.0, Semantic Web, Social Networks, Collaborative Systems, and expandable network of small diameter. Programming at the level of the end user. Architecture of intelligent information systems: service-oriented and multi-agent architectures. Information retrieval and navigation: Web agents, data collection from the web "crawling" Intelligent Web Tools, Web search engines and issue of semantics. Information management, information flow, integration and semistructured information resources, XML and RDF based information presentations.			
Practical teaching (exercises, OFE, study and research)			
Design and implementation of specific modules of Intelligent Information Systems.			
Textbooks/references			
1 Joseph S. Sussman, Perspectives on Intelligent Transportation Systems (ITS), Springer, 2010.			
2 Mashrur A. Chowdhury, Adel W. Sadek, Fundamentals of Intelligent Transportation Systems Planning, Artech House, (2003)			
3 Pablo Luque, Johan Wideberg, Daniel Mantaras, An intelligent transportation system to improve safety and efficiency OBD-II and smartphone apps., CreateSpace Independent Publishing Platform, 2012.)			
4 Asvin Goel, Fleet Telematics - Real-time management and planning of commercial vehicle operations, Springer, 2007			
5			
Number of classes of active education per week during semester/trimester/year			
Lectures	Exercises	OFE	Study and research work
2	1	0	
Teaching methods			
Lectures, Auditorial exercises, Laboratory exercises; Consultations, Independent students' research; students' oral presentation to the selected / given topics; Active students' participation in the classroom using an interactive course Web site			
Grade (maximum number of points 100)			
Pre-exam duties	Points	Final exam	Points
Activity during lectures	10	Written exam	
Exercises		Oral exam	40
Colloquia	40		
Projects	10		