

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Information Technologies and Systems		
Lecturer (for lectures)		Tošić B. Milorad		
Lecturer/associate (for exercises)		Nejković M. Valentina		
Lecturer/associate (for OFE)		Nejković M. Valentina		
Number of ECTS	5	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Acquisition of practical knowledge and skills in the usage of information technologies to improve business and other systems.			
Course outcomes	Developed and adopted a systematic approach to the usage of information technology is essential for the successful development and programming of complex information systems. Students adopted practical skills needed for programming components and technologies in modern information systems with a focus on application development based on enterprise service bus.			
Course outline				
Theoretical teaching	Introduction (Overview of Information Systems applications, Informatics, Information Technologies). Information systems platforms (platform based development, Enterprise Service Bus, service orientation), Programming IT infrastructure (network services; services for processing and data storage, Messaging Services), Enterprise Service Bus application development based on Open Source solutions (System configuration, Message routing, Data messaging, Data transformations). Implementation of advanced information management concepts based on enterprise service bus (Business process management, Data security, Transactions, Exceptions and reporting). Agile Methodologies (Scrum, Agile management), Information and data management (Working with massive data sets, Semantic systems) Software intensive systems (Collective Intelligence, System programming with massive users participation.)			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1	Rubinger, Andrew Lee, and Aslak Knutsen. Continuous Enterprise Development in Java: Testable Solutions with Arquillian. " O'Reilly Media, Inc.", 2014.			
2	Urma, Raoul-Gabriel, Mario Fusco, and Alan Mycroft. "Modern Java in action: Lambdas. streams, reactive and functional programming." (2019).			
3	Software repositories existing in the Laboratory			
4	Open Source code repositories available on Internet			
5	Materials available on the Internet			
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1	0	0
Teaching methods	Lectures, Auditorial exercises, Laboratory exercises; Consultations, Independent students' research; students' oral presentation to the selected / given topics			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam	Points	
Activity during lectures	10	Written exam		
Exercises	50	Oral exam	40	
Colloquia				
Projects				