

Study Programme: Ph.D. in Computer Science			
Course Unit Title: Component Based Development			
Course Unit Code: ID103			
Name of Lecturer(s): Miloš Racković, Srđan Škrbić			
Type and Level of Studies: Doctoral 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: 7			
Prerequisites: None			
Course Aims: Development of modern distributed systems is a complex activity. The question of size and distribution contributed to general pressure of the "software crises" – inability of the software industry to fulfill the expectations created by the rapid evolution of the computer hardware. One approach of solving these problems is "component-based development". The course provides historical background in order to understand questions and difficulties in the area. Furthermore, the course deals with the modeling techniques that can enable component-based development to be accepted methodology for software development and maintenance.			
Learning outcomes The successful student should be able to: <ul style="list-style-type: none"> • provide critical review of the main problems in the field of component-based development • evaluate the validity of the key concepts in the field • apply the research methods in the component-based development. 			
Syllabus Overview of the current research in the field: theoretical basis and background, the architecture of the component-based software, notation, component technologies, combining components. Current trends in the research area, for example security, aspects for the real-time systems, validation, verification and testing, formalization, the influence of the software field on the principles of the components creation and combining.			
Required Reading: <ol style="list-style-type: none"> 1. J. Cheesman, J. Daniels, UML Components, Addison Wesley 2001. 2. D. D.Souza, A.C. Wills, Objects, Components and Frameworks with UML, Addison Wesley 1999. 3. P. Eeles, K. Houston & W.Kozaczynski. Building J2EE Applications with the RUP, Addison Wesley, 2003. 4. Microsoft. Application Architecture for .NET: Designing Applications and Services. Microsoft Coop. 2002 5. Markus Aleksy, Axel Korthaus, Martin Schader. Implementing Distributed Systems with Java and CORBA, Springer, 2005 			
Weekly Contact Hours: 2		Lectures: 2	
Practical work: 0			
Teaching Methods: Lectures are organized using classic teaching methods with use of a projector. Students independently explore various research topics, present and discuss results with other students and the lecturer.			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Seminar paper	60	oral exam	40