Course title: Component-based development (code ID103)	

Lecturer(s): Racković A. Miloš, Škrbić M. Srđan

Status: elective

ECTS: 7

Requirements: none

Learning objectives

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 outcome

The successful student should be able to:

- 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

Theoretical instruction

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.

Practical instruction

Recommended literature

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: Designaing Applications and Services. Microsoft Coorp. 2002
5. Markus Aleksy, Axel Korthaus, Martin Schader. Implementing Distributed Systems with Java and CORBA, Springer, 2005

Weekly teaching load	Lectures: 3	Student research: 0

Teaching methodology

Lectures are held using classical teaching methods involving a projector. Students independently handle specific research topics, present and discuss the results with other students and lecturer. Student is obliged to write a seminar paper.

Grading method (maximal number of points 100)
Seminar 60,Oral exam 40