Study programme(s): Informatics (IM)

Level: master

Course title: System integration (course id: IB222)

Lecturers: Zoran Budimac, Danijela D. Tešendić

Status: elective

ECTS: 8

Requirements: none

Learning objectives

To provide in-depth understanding of technical details that participate in design and implementation of modern distributed systems through integration. To introduce students to various concepts and approaches for system integration.

Learning outcomes

Minimum: Students should be able to demonstrate the ability to assess the needs and benefits of different models and approaches to system integration, and implement a simple distributed system, which can effectively communicate with existing and the new architecture.

Optimum: Students should be able to demonstrate the ability to critically evaluate different integration capabilities, design and use the object-based distributed systems such as Common Object Request Broker Architecture (CORBA) and Web Services Model.

Syllabus

Theoretical instruction

Theoretical basis of integration, middleware-oriented integration, Java RMI and CORBA (architecture, interfaces, IDL, clients, services, CORBA vs. RMI and RPC), an introduction to XML, web services integration (model, architecture, XML protocols, UDDI, WSDL, SOAP, Simple Web Services - SWS, publication services, lookup service and activation), the targeted component-integration (model, architecture and component transaction, EJB), semantic-oriented integration (architecture, agent-oriented approach, intelligent systems and agent-service communication).

Practical instruction

Case study analysis.

Literature

Recomended

1 Gregor Hohpe, Bobby Woolf, Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions, Addison-Wesley, 2012

2. George F. Coulouris, Jean Dollimore, Tim Kindberg, Distributed Systems: Concepts And Design, Addison-Wesley, 2005

3. Thomas Erl, Service-oriented architecture: a field guide to integrating XML and Web services, Prentice Hall, 2004

4. Doreen L. Galli, Distributed operating systems: concepts and practice, Prentice Hall, 2000

Weekly teaching load				Other: 0
Lectures: 3	Exercises: 1	Practical Exercises: 2	Student research: 0	

Teaching methodology

Conventional teaching methods are used in lectures including the use of the video-beam. Theoretical exercises rely on conventional teaching methods including video-beam. They involve case studies analysis, exercising practical skills and working with the recommended tools and the environment introduced. Students improve their knowledge in each of the research topics and check them through practical assignments presented during and at the end of the course.

Grading (maximum number of points 100)			
Pre-exam obligations	**points**	**Final exam**	**points**
Practical instruction	**50**	Oral exam	**50**