

Study program: Information Technologies				
Type and level of study: Bachelor				
Subject title: Component Based Development				
Teacher (for lectures): Srdjan M. Skrbic				
Teacher/assistant (for practice): Milan Jović				
Subject status: mandatory				
Number of ECTS: 7				
Condition: none				
Subject goal				
This course aims to provide a practical overview of component-based development and its relationship with object-oriented approaches. Service-oriented architecture is being processed as the current predominant approach to component-based development. EJB 3 technology is introduced, focusing on its aspects related to component based development.				
Learning outcome				
<i>Minimum:</i> At the end of the course, it is expected that students demonstrate a clear understanding of the theoretical basis of component-based development and are able to use appropriate implementation techniques using EJB 3 technology.				
<i>Desirable:</i> At the end of the course, it is expected that a successful student investigates and critically discusses key concepts in component-based development and the impact of component-based development on business computing and software engineering. In addition, detailed knowledge of aspects of EJB 3 technology that allow development of applications based on components and service-oriented architecture is expected.				
Subject content				
<i>Theoretical lectures</i>				
Theoretical basis and background of component-based development, component-based architecture architecture, comparison with object-oriented approach, service-oriented architecture. Basic concepts of EJB 3 technology, EJB 3 messaging, web service development using EJB 3 technology, EJB 3 security.				
<i>Practical lectures</i>				
Analysis of case studies using EJB 3 technology, Eclipse development environment and WildFly application server. Study of an extensive example.				
Literature				
1. Debu Panda, Reza Rahman, Ryan Cuprak, "EJB 3 in Action", 2nd edition Manning, 2012.				
2. Francesco Marchioni and Michal Cmil, "Java EE 7 Development with WildFly", PACKT publishing, 2015.				
3. Alan W. Brown, "Large-Scale, Component-Based Development", Prentice Hall, 2000.				
4. Hedley Apperly, Ralph Hofman, Steve Latchem, Barry Maybank, Barry McGibbon, David Piper, Chris Simons, "Service and Component-based Development: Using Select Perspective and UML", Addison-Wesley, 2003.				
5. Vlada Matena, Sanjeev Krishnan, Linda DeMichiel, Beth Stearns, "Applying Enterprise JavaBeans: Component-Based Development for the J2EE Platform, Second Edition", Addison Wesley, 2003.				
6. Andrew Lee Rubinger, Bill Burke, "Enterprise JavaBeans 3.1", O'Reilly, 2010.				
Number of classes of active teaching weekly during semester				
Lectures: 2	Practice: 3	OTT:	Research work:	Other classes:
Types of teaching				
In the lectures, classical teaching methods using video beam are used to present the topics. In practice, classical teaching methods, using video beam and computers with the necessary software installed are used to practically train skills by getting to know the recommended tools. The premise for successful exercises is the existence of a sufficient number of computers so that each student can work individually. Students upgrade their knowledge by researching each of the topics covered and check their knowledge through two colloquia that follow the development of an individual practical task.				
Assessment (maximum 100 points)				
Pre exam requirements	points	Final exam	points	
colloquia	50	oral exam	50	