Design of multitier web systems - course description

General information

Course name	Design of multitier web systems
Course ID	11.3-WE-INFP-DoMWS-Er
Faculty	Faculty of Computer Science, Electrical Engineering and Automatics
Field of study	Computer Science
Education profile	academic
Level of studies	Erasmus programme
Beginning semester	winter term 2017/2018

Course information

Semester	6
ECTS credits to win	4
Course type	optional
Teaching language	english
Author of syllabus	• dr inż. Tomasz Gratkowski

Classes forms

The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	15	1	-	-	Exam
Laboratory	15	1	-	-	Credit with grade
Project	15	1	-	-	Credit with grade

Aim of the course

- To introduce students with the basics method of building multi-tier internet system in Java 2 Enterprise Edition or Microsoft .Net technology.
- To familiarize students with the principles of design multi-tier internet system in Java 2 Enterprise Edition or Microsoft .Net technology.

Prerequisites

Principles of programming, object oriented programming, Concurrent and distributed programming

Scope

Presentation tier: Getting Started with Web Applications. Technologies for creating dynamic Web sites and rich internet applications (RIA).

Web Services: Introduction to Web Services. Building Web Services and Web Services clients. Using of Simple Object Access Protocol (SOAP).

A Component Tier: A Component container. What Is a Session Bean. What Is a Message-Driven Bean. Building, Packaging, Deploying, and Running the component's application.

Data Tier: Object/relational data mapping. Data model on all tiers in multi-tier system.

Additional services: Introduction to Security in the Multi-tier Systems. Design patterns for multi-tier systems.

Teaching methods

Lecture: conventional lecture
Laboratory: laboratory exercises, group work
Project: project method, discussions and presentations

Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
Can use the latest tools and technologies supporting the creation of online multi-tier systems.		• an ongoing monitoring during classes	• Laboratory
Can explain the idea behind the application of component technology.		• a quiz • a test	• Lecture
Is aware of the need to use multilayer models when constructing complex applications.		• a quiz • a test	• Lecture
Can design and create a modern multi-tier Internet system.		• a project	• Project
Can describe a way of building systems based on a service model.		• a quiz • a test	• Lecture

Assignment conditions

Lecture - obtaining a positive grade in written exam.

Laboratory - the main condition to get a pass are sufficient marks for all exercises and tests conducted during the semester.

Project - a condition of pass is to obtain positive marks from all project tasks and preparation written report of project.

Calculation of the final grade: = lecture 40% + laboratory 30% + project 30%.

Recommended reading

1. Java Platform, Enterprise Edition, The Java EE Tutorial, Release 7, E39031-01, September 2014, https://docs.oracle.com/javaee/7/tutorial/
2. Deepak Alur, John Crupi, Dan Malks: Core J2EE Patterns: Best Practices and Design Strategies (2nd Edition); Prentice Hall, 2003;
3. Sameer Tyagi, Keiron McCammon, Michael Vorburger, Heiko Bobzin: Core JAVA Data Objects; Prentice Hall, 2003;
4. Bryan Basham, Kathy Sierra, Bert Bates: Head First Servlets and JSP: Passing the Sun Certified Web Component Developer Exam; O'Reilly Media; 2008;
5. William Crawford, Jonathan Kaplan: J2EE Design Patterns; O'Reilly Media; 2003;
6. Joel Scamray, Mike Shema: Hacking Exposed Web Applications, 3nd Ed.; McGraw-Hill Osborne Media; 2010;
7. S.Graham, S.Simeonov, T. Boubez, D. Davis, G. Daniels: Building Web Services with Java: Making Sense of XML, SOAP, WSDL and UDDI; Pearson Education; 2001;
8. Alan Monnox: Rapid J2EE Development: An Adaptive Foundation for Enterprise Applications; Prentice Hall; 2005;
9. Matthew MacDonald: Beginning ASP.NET 4.5 in C#; Apress; 2012;
10. The C# Station ADO.NET Tutorial: http://www.csharp-station.com/Tutorials/AdoDotNet/
11. Moroney L.: Microsoft® Silverlight® 4 Step by Step; Microsoft Press; 2010;
12. Beres J., Evjen B., Rader D.: Professional Silverlight 4; Wrox Press; 2010;
13. 101 LINQ Samples: http://msdn.microsoft.com/en-us/vcsharp/aa336746

Further reading

Notes

Modified by dr inż. Tomasz Gratkowski (last modification: 29-05-2017 12:56)