

Advanced e-Business technologies - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Advanced e-Business technologies
Kod przedmiotu	04.2-WE-BizEIP-ZaawTechnE-Bizn-Er
Wydział	Wydział Nauk Inżynieryjno-Technicznych
Kierunek	Biznes elektroniczny
Profil	praktyczny
Rodzaj studiów	Program Erasmus pierwszego stopnia
Semestr rozpoczęcia	semestr zimowy 2023/2024

Informacje o przedmiocie	
Semestr	3
Liczba punktów ECTS do zdobycia	6
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	<ul style="list-style-type: none">dr inż. Jacek Tkaczdr inż. Tomasz Gratkowski

Formy zajęć					
Forma zajęć	Liczba godzin w semestrze (stacjonarne)	Liczba godzin w tygodniu (stacjonarne)	Liczba godzin w semestrze (niestacjonarne)	Liczba godzin w tygodniu (niestacjonarne)	Forma zaliczenia
Wykład	30	2	-	-	Egzamin
Laboratorium	30	2	-	-	Zaliczenie na ocenę

Cel przedmiotu

The basic concepts of the design, integration and programming of modern multilayer (n-tier) e-business systems based on JEE technologies. Designing systems based on the SOA paradigm using network services and their orchestration mechanisms. Acquaintance with modern tools supporting the design and implementation of the discussed solutions.

Wymagania wstępne

Object-oriented design and programming

Zakres tematyczny

Multithreaded programming in Java. Creating and synchronizing threads. In-process synchronization mechanism, thread expropriation, time segmentation, priorities.

Basics of creating web applications in Java. Network socket programming, client-server architecture, server implementation, identification of network resources.

Architecture of modern client-server, B2C and B2B information systems. Comparison of techniques for producing e-business systems and technologies available in this field, i.e. PHP, .NET and JEE.

Basics of designing client-server type n-tiered (multi-layer) systems. Division into layers of presentation, business logic and data. Web application development based on Java Enterprise Edition (JEE) specification. Object-relational mapping (ORM) techniques, event queuing (JMS) techniques, transactional support.

Techniques of integration of modern information systems. The SOA (Service Oriented Architectures) paradigm and its application for building systems based on network services. WSDL language for description of network services. Systems integration using network services. Creating network services using Java.

Advanced integration using web services orchestration. Automatic composition of network services using semantic networks and semantic web services. The use of network services to create scalable SaaS (software as a service) systems for cloud computing.

Design patterns used during integration and design of IT systems. MVC pattern, inverted control (IoC) pattern, factory pattern.

A development tools for supporting the creation and testing of e-business applications.

Metody kształcenia

Lecture - standard lecture using a video projector.

Laboratory - practical classes in the computer laboratory.

Efekty uczenia się i metody weryfikacji osiągnięcia efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
Student can describe the architecture of modern multilayer client-server, B2B, B2C systems.		<ul style="list-style-type: none">zaliczenie - ustne, opisowe, testowe i inne	<ul style="list-style-type: none">Wykład

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
The student can describe how to orchestrate network services and examples of use		<ul style="list-style-type: none"> przygotowanie projektu zaliczenie - ustne, opisowe, testowe i inne 	<ul style="list-style-type: none"> Wykład Laboratorium
The student is able to design and implement a simple application consisting of several network services		<ul style="list-style-type: none"> przygotowanie projektu 	<ul style="list-style-type: none"> Laboratorium
The student knows SOA architectures to facilitate system integration.		<ul style="list-style-type: none"> zaliczenie - ustne, opisowe, testowe i inne 	<ul style="list-style-type: none"> Wykład
The student knows the JEE specification techniques / technologies		<ul style="list-style-type: none"> zaliczenie - ustne, opisowe, testowe i inne 	<ul style="list-style-type: none"> Wykład

Warunki zaliczenia

Lecture - writing and/or oral test, carried out at the end of the semester

Laboratory - the final grade is the weighted sum of the marks obtained for the implementation of individual laboratory exercises and control tests verifying the substantive preparation for the exercises.

Final grade = 50% of the grade in the form of classes lecture + 50% of the grade in the form of laboratory classes.

Literatura podstawowa

1. Erl, Th., Rischbeck, Th., SOA Design Patterns, Prentice Hall PTR; 1 edition (January 9, 2009)
2. Horstmann, C.S., Cornell, G., Core Java, Volume II--Advanced Features (11th Edition) 11th Edition, Prentice Hall; 11 edition (May 5, 2019)
3. Berners-Lee, T., *Weaving the Web*, New York, HarperCollins, 2000.

Literatura uzupełniająca

1. Goetz B., Peierls T., Bloch J., Bowbeer j., Holmes D., Lea D.: Java Concurrency in Practice, Addison-Wesley Professional 2006
2. Rotem-Gal-Oz A., SOA Patterns, Manning Publications; 1 edition (September 24, 2012)
3. Sourabh Sharma: Mastering Microservices with Java: Build enterprise microservices with Spring Boot 2.0, Spring Cloud, and Angular, Packt, 2019
4. Chris Richardson: Microservices Patterns: With Examples in Java, Manning, 2018
5. Sparkowsky A, Piefel M, CorneliBen P., Spring Boot 2 Fundamentals, Packt Publishing, 2018
6. Brendan Gregg: Systems Performance: Enterprise and the Cloud, Prentice Hall, 2014
7. Ray J. Rafaels, Cloud Computing: From Beginning to End, CreateSpace Independent Publishing Platform, 2015
8. Thomas Erl, Robert Cope, Amin Naserpour: Cloud Computing Design Patterns (The Prentice Hall Service Technology Series from Thomas Erl), Prentice Hall, 2015
9. Thomas Erl, Robert Cope, Zaigham Mahmood: Cloud Computing: Concepts, Technology & Architecture (The Prentice Hall Service Technology Series from Thomas Erl) Prentice Hall, 2013

Uwagi

Zmodyfikowane przez dr inż. Tomasz Gratkowski (ostatnia modyfikacja: 05-04-2023 10:06)

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