.NET platform - opis przedmiotu

Informacje ogólne

Nazwa przedmiotu	.NET platform
Kod przedmiotu	11.3-WE-INFP-Platf.NET-Er
Wydział	Wydział Nauk Inżynieryjno-Technicznych
Kierunek	Informatyka
Profil	ogólnoakademicki
Rodzaj studiów	Program Erasmus
Semestr rozpoczęcia	semestr zimowy 2017/2018

Informacje o przedmiocie

Semestr	6
Liczba punktów ECTS do zdobycia	4
Typ przedmiotu	obieralny
Język nauczania	angielski
Sylabus opracował	• dr hab. inż. Marek Sawerwain, prof. UZ

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
Projekt	15	1	-	-	Zaliczenie na ocenę

Cel przedmiotu

- Familiarize students with concept and the role of the IT platform in the daily practice of IT developer.
- Familiarize students with basic information about the .NET platform as a development environment for the traditional desktop applications and for internet applications (ASP.NET).
- Learn basic skills in C# programming. Using database systems. Describing data using XML. Creation dynamic web pages in ASP.NET technology.
- Shaping the basic skills of creating network services including the security of .NET applications. Familiarize students with other .NET programming languages e.g. F#.

Wymagania wstępne

Programming fundamentals, Object oriented programming, Algorithms and Data Structures, Databases

Zakres tematyczny

Introduction to .NET platform. Structure of the .NET platform. .NET distributions. Outline of .NET Framework environment.

Review of programming languages supported by .NET platform. Microsoft Visual Studio - environment characteristic.

Presentation of programming environment. Tool for form editing. Running application. Creating sample application.

Common Language Runtime. Elementary functions and services of CLR. Memory and other resources management. Thread management. Structure and configuration of metadata. Integration with Win32 DLL libraries. Methods of interaction between applications. Comparison between CLR and JVM.

Fundamentals of C# programming. Language syntax: instructions, variables, operators and data types. Design principles of classes, methods, constructors and objects. Arrays usage guidelines.

Software Development Kit – review of main programming tools.

Advanced C# programming. Preprocessor directives. Event handling. Handling errors using exceptions. Common string operations. Regular expressions reference. Remote object invocation. File access operations. Thread synchronization. Base Class Library – review. User interface components.

Introduction to functional programming in F#: Introduction to F#. Review of functional programming style. Operators and data structures.

Creating components in .NET. Principles of designing, implementing and testing components. COM and COM+ technology overview.

XML in .NET. Methods of information transfer using XML documents. Review of classes for XML documents manipulation and transformation.

Access data using ADO.NET. Review of ADO.NET objects. Database access methods.

Language Integrated Query – LINQ. Architecture of LINQ technology. LINQ queries to objects, databases, SQL databases and XML data. Parallel and serial LINQ queries.

ASP.NET technology. Base classes and main objects of ASP.NET. Using XML in ASP.NET. Designing web pages using ASP components.

Creating web services. SOAP and UDDI protocols.

Security features of ASP.NET applications: access control, authentication and data encoding and cryptography.

Metody kształcenia

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

Efekty uczenia się i metody weryfikacji osiągania efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
Can analyze existing problems and identify ways and techniques for solving these problems using .NET platform.		• projekt • sprawozdanie z projektu	• Projekt
Can create documentation for new projects and existing .NET libraries / packages / packages.		• obserwacja i ocena aktywności na zajęciach • sprawdzian z progami punktowymi	• Laboratorium
Can create new components (and develop existing components) for solving IT problems in a basic way. Student is also familiar with the structure of .NET components.		• sprawdzian z progami punktowymi	• Laboratorium
Knows ethical behavior and licensing issues for third-party packages / components / libraries used in .NET projects.		• sprawdzian z progami punktowymi	• Wykład
Student is able to create an application for the .NET environment that uses its capabilities.		• obserwacja i ocena aktywności na zajęciach • sprawdzian z progami punktowymi	• Laboratorium
Student is able to work on IT system and is familiar with the team tools for workgroup.		• projekt • wykonanie sprawozdań laboratoryjnych	• Projekt
Student is familiar with the basic components of the platform and is able to characterize the advantages and disadvantages of .NET platform. Student is also aware of dynamic development of .NET platform.		• sprawdzian z progami punktowymi	• Wykład
Student is oriented to the capabilities of .NET in the field of application security and security of information generated by users or other .NET applications.		• sprawdzian z progami punktowymi	• Wykład

Warunki zaliczenia

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%.

Literatura podstawowa

1. Chappell D., Understanding .NET (2nd Edition), Addison-Wesley Professional, 2nd edition, 2006.
2. Duffy J.: Professional .NET Framework 2.0 (Programmer to Programmer), Wrox, 2006.
3. Michelsen K.: C# Primer Plus, Sams Publishing, 2007.
4. Chadwick J., Snyder T., Panda H.,Programming ASP.NET MVC 4: Developing Real-World Web Applications with ASP.NET MVC, O'Reilly Media, 2012.
5. Magennis T., LINQ to Objects Using C# 4.0: Using and Extending LINQ to Objects and Parallel LINQ (PLINQ), Addison-Wesley Microsoft Technology, 2010.
6. Burton K.: .NET Common Language Runtime Unleashed, Sams Publishing, 2002.
7. Solis D.M.: Illustrated C# 2010, A-Press, 2010.
8. Löwy J.,Programming WCF Services: Mastering WCF and the Azure AppFabric Service Bus, O'Reilly Media, 2010.

Literatura uzupełniająca

1. Novák. I, Velvárt A., Granicz A., Balássy G., Hajdrik A., Sellers M., Hillar G.C., Molnár A., Kanjilal J.: Visual Studio 2010 and .NET 4 Six-in-One, Wiley Publishing, Inc., 2010.
2. Johnson B., Professional Visual Studio 2013, Wiley Publishing, Inc., 2014.
3. Nash T.: Accelerated C# 2010, A-Press, 2010.
4. Troelsen A.: Pro C# 5.0 and the .NET 4.5 Platform, 6th Ed., A-Press, 2012.
5. Freeman A., Rattz J.C. Jr.: Pro LINQ: Language Integrated Query in C#, A-Press, 2010.

6. Richter J., CLR via C#, 3rd edition, Microsoft Press, 2010.

Uwagi

Zmodyfikowane przez dr hab. inż. Marek Sawerwain, prof. UZ (ostatnia modyfikacja: 08-05-2017 21:02)

Wygenerowano automatycznie z systemu SylabUZ