New York University

School of Continuing and Professional Studies
Information Technologies Institute

Course Title: Fundamentals of .NET
Course Number: INFO1-CE9243001
Instructor: Keith Harris (keith9820@hotmail.com)

Course Description
Microsoft's next generation application framework and development suite, .NET, is used for Web- and Windows-based application development. It utilizes a common language runtime engine that allows multiple programming language support and component assembly and deployment. This course gives participants a foundation in .NET and looks at the enterprise server family, which fully integrates data exchange functionality with Web services. Topics include the .NET architecture, .NET framework, .NET programming languages, common language specifications, and much more. Students will learn to create command-line, windows-based, and database-driven web-based applications using industry best-practices.

Course Objectives
The objectives of the course are to:

1) Provide a basic understanding of Microsoft's .NET architecture.
2) Familiarize students with the MS Visual Studio IDE.
3) Teach basic object-oriented programming skills using the C# language.
4) Introduce students to .NET Web Support using ASP.NET.
5) Introduce students to .NET data access using ADO.NET.
6) Learn how to develop "real-world" applications consisting of multiple project types.

Prerequisites
Prior programming experience is required. Familiarity with the Windows environment is helpful but not required.

Print resources:
Microsoft Visual C# .NET (Core Reference), Mickey Williams, Microsoft Press
Applied Microsoft .NET Framework Programming, Jeffrey Richter, Microsoft Press
Programming .NET components, Juval Lowy, O'Reilly
Programming Microsoft .NET, Jeff Prosise, Microsoft Press
Applied .NET Framework Programming, Jeff Richter, Microsoft Press
CLR Via C#, Jeff Richter, Microsoft Press

Resources on the web
- http://msdn2.microsoft.com/library
- http://msdn2.microsoft.com/en-us/netframework/default.aspx

- http://google.com
- http://wikipedia.com

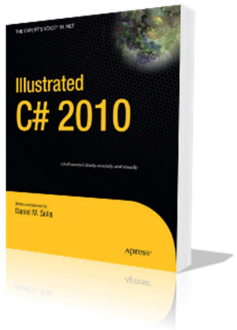
Reading Assignments
If given, reading assignments will be from the web. The reading assignment will either help you prepare you for the next class, or review what was presented in the previous class.

Programming Assignments
A total of two assignments will be given at the end of session 5 and 7.

Grading Policy
70% Attendance
30% Assignments

Resources needed for the course
We will use Visual Studio.NET for all our examples and tests. Visual Studio 2010 pro can be downloaded at no charge to students via Microsoft DreamSpark https://www.dreamspark.com/.

Suggested textbook: Illustrated C# 2010 by Daniel Solis:



Syllabus Updates
The current syllabus lists a lot of topics and it is possible that more will be covered in class. Syllabus revisions will be made after gauging the skill level of students. Throughout the term, we may decide to discuss additional relevant topics for which there is significant student interest.

Miscellaneous Notes

- Programming assignments are due by midnight on the day of classes #6 and 8. Upload all assignments, including your final via the Blackboard system.
- If you have any class-related questions, you can send them to me at keith9820@hotmail.com and I will respond as quickly as possible.
- Please feel free to use a laptop in class.

Course Schedule

Session 1. Introduction / .NET Framework Essentials

- Class introduction
- Introduction to the .NET framework
- The Visual Studio .NET IDE
- Console Projects
- Program Structure, Classes

Session 2. C# Language Features

Session 3. C#

- Arrays
- Error Handling
- Collections

Session 4. Windows Forms

- Introducing Windows Forms
- The System.Windows.Forms Namespace
- Windows Forms Development
- Assignment #1 (15 points)

Session 5. Open Lab Time

- Discuss and Work on Assignment #1

Session 6. Data Access

- ADO.NET Architecture
- ADO.NET Benefits
- .NET Framework Data Providers
- *Assignment #1 due before midnight*

Session 7. ASP.NET
- The System.Web.UI.Namespace
- ASP.NET Application Development
- Data Binding and the Use of Templates
- State Management and Scalability

Session 8. WCF Web Services
- Web Services Framework
- Web Services Providers / Consumers
- Assignment #2 (15 points)

Session 9. Open Lab Time
- Discuss and Work on Assignment #2

Session 10. Interoperability & Course Wrap-up
- COM (CCW, RCW)
- Win32 API (PInvoke)
- *Assignment #2 due before midnight*

Assignments

1. Create a windows-based application for the fictitious “Student Auto-Sales” company. You will reuse the object model library created in previous labs.

2. Create a web-based version of the “Student Auto-Sales” project which stores inventory in a database and uses an N-tier architecture consisting of an ASP.NET UI, business object library, and WCF web service.