MET CS 651 -- Web Development with .NET

Instructor

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Course Description

This course provides a comprehensive introduction to building state-of-the-art Web sites, Web applications, Web services, and Web-connected devices on Microsoft platforms, with an emphasis on server-side technologies. Microsoft's shift to open source technologies and the enabling of these technologies on non-Microsoft platforms such as Apple laptops means that you do not need a Microsoft laptop anymore to leverage .NET, and this is an exciting turn for all. Although the server-side will be primarily the .NET foundation, we'll use a number of open source client-side technologies such as Angular and Polymer.

Server-side technologies covered include the C# programming language, the ASP.NET system for developing web sites and web apps, REST-based and SOAP-based web services, ADO.NET and LINQ (Language INtegrated Query) for data access, AJAX and jQuery presentation technologies on the client side. State-of-the-art technologies covered include Model View Controller (MVC) and Model-View-ViewModel (MVVM) architectures and frameworks, Windows Communication Framework (WCF), server-side javascript, and Internet-of-Things (IoT) devices such as the Kinect device and the Arduino microprocessor. We'll end the class with a focus on the evolution of Web technologies, with a case study on Silverlight and HTML5, and the distinctions between programming for a universal browser, programming for Web-connected "closed gardens" such as Windows RT, and programming for mobile platforms. Bring your laptop to class, it does not matter if it's Microsoft, Apple, or Linux. This class requires programming experience in either Java, C#, or C++, but it does not require you to be an expert. Rather, it is an opportunity to become a Web development expert.

Programming will be based on Microsoft Visual Studio or Microsoft Code, available through BU's MSDNAA. A copy of the software will be provided to students.

Course Grading Policy

The course grade will be based on active class participation (10%), assignments (30%), mid term exam (30%), and final project (30%). Although not a requirement of the class, the instructor will encourage you and help you to upload your project on the Web.

Course Web Site

All course materials will be posted using BU's Blackboard site. This requires all students to have an account with the BU computer system.

Textbooks

1. Laurence Moroney, Beginning Web Development, Silverlight, and ASP.NET AJAX: From Novice to Professional, Apress, 2008 (ISBN-13: 978-1590599594) (Required)
2. Pro Web 2.0 Mashups: Remixing Data and Web Services (Expert's Voice in Web Development) by Raymond Yee (Paperback - Feb 25, 2008) (Recommended #1)
3. Pro ASP.NET MVC Framework by Steven Sanderson (Paperback - April 30, 2009) (Recommended #2)

Student Conduct Code

Please review the academic conduct code

Tentative Course Schedule

Module 1 Introduction: The Web App, setting up your laptop for Web development - Week 1
Module 2 Server-side technologies, C# 4.0 and .NET CLR 4.0 - Week 2
Module 3 Server-side frameworks and client-side engines, ASP.NET and AJAX - Weeks 3, 4
Module 4 Web-based data access technologies, ADO.NET, LINQ and JQuery - Weeks 5, 6 **Mid Term** Week 7
Module 5 Connecting to Web-based data pipelines, .NET Web Services, SOAP and REST - Week 11
Module 6 Web-based application architectures, .NET MVC and MVVM - Week 12
Module 7 Web-based devices, Microsoft Kinect®, Arduino®, and server-side javascript - Week 13
Module 8 Web Futures, Silverlight/HTML5 case study - Week 14
Module 9 Final Project presentation - Week 15