

.NET Application Development Intensive (X52.9799)
Instructor: George Pefanis_
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Monday & Wednesday 6:00 PM – 10:00 PM
New York University
Woolworth Building 15 Barclay Street

This accelerated hands-on course prepares students with no previous .NET background to program Web-based solutions in ASP.NET. At the completion of this course, you will learn to develop a professional full-blown database-driven Web application using Microsoft's ASP.NET technology. Programming languages include: C# and VB.NET. You will learn form processing, validators, data binding, IO, Web Controls, ADO.NET, SOAP, AJAX, LINQ and SQL. XML topics include: writing well-formed and valid XML Document Object Model documents, creating Document Types Definitions, and XML Schemas. Front-end technologies covered are: JavaScript, XHTML, CSS, and XSL. Examples include: creating XSL style sheets to dynamically publish XML documents, and combining XSL and CSS. Development tools include: MS Visual Studio.NET. Database include: MS Access and MS SQL Server 2008.

Course Objectives

At the completion of this course, the student will be able to:

- Participate effectively in discussion on Microsoft's .NET Framework.
- Be able to write ASP.NET pages using C#.
- Learn the eXtensible Markup Language (XML) and Microsoft .NET Active Server Pages (ASPX) technology for developing web applications.
- Be able to write server-side ASPX code using the ASPX objects.
- Be able to use server-side compiled programming such as .NET Active Server Pages (ASPX) or client-side scripting Javascript to dynamically generate XML DOM documents.
- Be able to write well-formed and valid XML DOM (Document Object Model) documents.
- Be proficient in ADO.Net and LINQ.
- Be proficient in AJAX.
- Be able to write XSL style sheets to dynamically publish XML documents and combine XSL and CSS technology to publish XML documents.
- Participate effectively in discussion on ASP.NET, ADO.NET, ASP, XML, XHTML, JavaScript, SQL, Access, and SQL Server.

Required Text -

Programming ASP.NET 3.5
By Liberty, Maharry, Hurwitz (ISBN 0596529562 (\$59.95))

Sams Teach Yourself XHTML and CSS in 24 Hours (Includes New XHTML 5 Coverage) (8th Edition)
By Meloni, Morrison (ISBN 0672330970 (\$34.99))

Javascript: The Definitive Guide
By David Flanagan (ISBN 0596101996 (\$49.95))

Recommended Software -

MS Visual Studio .NET 2010 (can use free express edition)
MS SQL Server 2008 (can use free express edition)

Assignments -

Mid-Semester Project using: XHTML Javascript ASP.NET
Final Project using: XHTML Javascript ASP.NET XML VB.NET / C#

Grading -

20% Class Homework
15% Mid-Semester Project
15% Mid-Semester Examination
20% Final Examination
20% Final Project
10% Class Participation

SYLLABI

Week 1 (Programming Technologies: UNIX / XHTML)

• Session 1

Outline

- History of the Internet and the World Wide Web
- Evolution of Internet programming languages
- Relationship between browser and server
- Issues in Web Design
- Planning a Web site
 - Purpose of your Web site
 - Audience
- Research links and resources
- Introduction to Arpanet
- Introduction to Packet Switching
- Introduction to TCP/IP
- Introduction to XHTML

Reading

- Sams Teach Yourself XHTML and CSS in 24 Hours – Hours 1 - 12
- **Session 2**
- Create XHTML documents using MS Visual Studio.NET
- Learn text formatting XHTML tags
- Creating XHTML lists
- Creating XHTML links
- Adding an image to your Web site
- Making an image link
- Learn how to use frames
- Learn how to use tables
- Learn how to use forms
- Input Box, Password Box, Check Box, Radio Button, Drop-down menus, Text Area, List menu

Homework #1

- Create an external CSS file
- Create one XHTML page with five form elements using the external CSS file
- Create one XHTML page with a table using the external CSS file

Week 2 (Programming Technologies: XHTML / Javascript)

- **Session 1**

Outline

- Intro to XHTML constants
- Intro to RGB Color Scheme
- Intro to CSS
- Intro to Images on your Web page
- Intro to Sound on your Web page
- Intro to Object Oriented Programming (OOP)
- Intro to JavaScript
 - Variables
 - Operators
 - Loops
- Intro to JavaScript
 - Objects
 - Events
 - DOM

Reading

- Sams Teach Yourself XHTML and CSS in 24 Hours – Hours 13 - 24
- **Session 2**
- Using internal CSS
- Using imagemaps
- Use JavaScript to loop through a checkbox collection
- Creating rollover images
- Use JavaScript to verify your forms

Homework #2

- Create a XHTML page with two JavaScript functions

Week 3 (Programming Technologies: XHTML / JavaScript / ASP.NET)

- **Session 1**

Outline

- Intro to Cookies
- Intro to Cache
- Intro to Encryption
- Intro to Firewalls
- Intro to HTTP
- Maintaining State in your Web Environment

Reading

- Javascript: The Definitive Guide – Chapter 1 - 8
- **Session 2**
- JavaScript operators by example
- Working with JavaScript arrays and objects
- Create a Visual Studio .NET web application

Homework #3

- Create a XHTML page that writes and reads a cookie to the local machine using JavaScript

Week 4 (Programming Technologies: ASP.NET)

- **Session 1**

Outline

- Overview of Active Server Objects
- Introduction to .NET Framework

- ASP vs. ASPX
- Intro to VB.NET and C#
 - Functions
 - Operators
 - Loops
- Using Arrays in .Net
- Making JavaScript and ASP.Net Communicate

Reading

- Programming ASP.NET 3.5 – Chapter 1 – 2

• **Session 2**

- Using popular C# functions or operators
- Form Processing
- Programming .Net Cookies

Homework #4

- Create an .aspx with at least five form elements and return the values of the form in a XHTML table

Week 5 (Programming Technologies: ASP.NET)

• **Session 1**

Outline

- Introduction to Webforms
- Introduction to ASP Controls
- Mid-Semester Examination Review
- Mid-Semester Project Review

Reading

- Programming ASP.NET 3.5 – Chapter 3 – 4

• **Session 2**

- Browser Capabilities
- Cookie Manipulation
- .NET Validators
- How doesPostBack work?

Mid-Semester Project

- Create a survey system with 10 questions that returns a score at the end
- Question numbers and answers must be stored in a Session array or Viewstate
- All questions must be answered
- Survey must have a log-in and user profile screen

Week 6 (Programming Technologies: ASP.NET)

• **Session 1**

Outline

- Intro to SMTP (Simple Mail Transfer Protocol)
- E-mail Discussion
- Intro to IO
- Intro to the File System Object
- Intro to SSL (Secure Sockets Layer)
- **Mid-Semester Project Due**

Reading

- Programming ASP.NET 3.5 – Chapter 5 – 6

• **Session 2**

- Retrieve and manipulate files and directories from your web server using System.IO
- Mail object in .NET
- Auto generate emails using ASP.NET
- Auto generate emails with attachments using ASP.NET

Homework

- Study for Mid-term

Week 7 (Programming Technologies: ASP.NET)

• **Session 1**

Outline

- Intro to Relation Databases
- Database Access Component in .Net
- ADO.NET (ActiveX Data Object for .Net)
- Working with the GridView
- Intro to SQL (Structures Query Language)
- **Mid-Semester Examination**

Reading

- Programming ASP.NET 3.5 – Chapter 7 – 8

- **Session 2**
- Programming with ADO.NET
- Introduction to DataBinding
- DataBinding with RadioButtons, CheckBoxes, ListBoxes, and ComboBoxes
- Access and SQL Server database tables for the web
- Add, Update, and Delete records from your tables
- Using SQL (Structures Query Language) in ASP.NET

Homework #5

- Create simple database or use northwind from Access or SQL Server
- Call table or stored procedure and display in a table
- Create a field sort feature

Week 8 (Programming Technologies: C#)

- **Session 1**

Outline

- Error-handling your ASP.NET code
- What are web services?
- Working with LINQ
- Advanced features of ADO.Net
- Advanced SQL (Structures Query Language)

Reading

- Programming ASP.NET 3.5 – Chapter 9

- **Session 2**

- Using Stored Procedure and Queries
- Using SQL (Structures Query Language) in ASP.NET
- Using the GridView for Sorting and Paging
- Using the Master/Detail view

Homework #6

- Create an .aspx with SQL modification (INSERT, UPDATE, DELETE)

Week 9 (Programming Technologies: XML)

- **Session 1**

Outline

- Intro to AJAX
- Intro to XML
 - Creating well-formed documents
 - Creating valid documents
- Discussion: XHTML vs. XML
- Discussion: XML Components
 - Declaration
 - Root
 - Element
 - Attribute
 - Entity
- Document Object Model (DOM) interface

Reading

- Programming ASP.NET 3.5 – Chapter 10

- **Session 2**

- Consuming and Producing a web service using Northwind
- Create well-formed and valid XML documents
- Utilize XSL and CSS in your XML documents

Homework #7

- Create a XML document with 10 elements
- Use XSLT to display above XML document

Week 10 (Programming Technologies: XML)

- **Session 1**

Outline

- Intro to XML
 - Creating Schemas
 - XSL
- Intro to Server-side XML applications

Reading

- Programming ASP.NET 3.5 – Chapter 11 – 13

- **Session 2**

- Create DOM XML document SQL and ADO from your database

Homework #8

- Create a valid and well-formed Schema for the XML document from homework #7

Week 11 (Programming Technologies: ASP.NET / XML)

- **Session 1**

- Outline

- Intro to Microsoft XMLHTTP.dll
- Schemas
- Final Examination Review
- Final Project Review

- Reading

- Programming ASP.NET 3.5 – Chapter 14 – 19

- **Session 2**

- Create DOM XML document using Element and Nodelist object in XMLDOM.dll
- Create attributes and elements using the XMLDOM.dll
- Create New DOM XML document using the XMLDOM.dll

- Final Project

- Build a mini version of Expedia
- Store the available flight data in an XML document
- Store client and order details into your database

Week 12 (Programming Technologies: XHTML / JavaScript / C# / ASP.NET / XML)

- **Session 1**

- Outline

- **Final Examination**
- Wrap-up lecture

- **Session 2**

- **Final Project due**