Western Technical College

10152187 Web Development with ASP.Net

Course Outcome Summary

Course Information

Description	This programming course teaches the student how to create dynamic web content and covers advanced object oriented programming principles. The course utilizes SQL and continues building on HTML and .NET skills. Through the use of a database (Microsoft SQL Server), a web programming language (ASP.Net) and a web server, the student will learn how to create database driven web sites.
Career Cluster	Information Technology
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	72

Pre/Corequisites

Prerequisite 10152191 Database Development with .NET

Textbooks

Murach's ASP.NET Core MVC. Copyright 2020. Delamater, Mary. Publisher: Mike Murach & Associates, Inc. **ISBN-13:** 978-1-943872-49-7. Required.

Learner Supplies

USB Flash Drive for file storage. **Manufacturer:** Any. **Quantity:** 1. **Description:** A two gigabyte flash drive is adequate for this course. Required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Expand a Growth-Mindset
3. Cultivate Passion: Increase Self-Awareness
4. Live Responsibly: Develop Resilience
5. Live Responsibly: Embrace Sustainability
6. Live Responsibly: Foster Accountability
7. Refine Professionalism: Act Ethically
8. Refine Professionalism: Improve Critical Thinking
9. Refine Professionalism: Participate Collaboratively
10. Refine Professionalism: Practice Effective Communication

Course Competencies

1. Examine advanced object-oriented program principles as implemented in Visual Basic.

Assessment Strategies

1.1. Quizzes
1.2. Lab
1.3. Project

Criteria

You will know you are successful when

1.1. you describe encapsulation, polymorphism and inheritance.
1.2. you invoke overloaded methods and constructors.
1.3. you write overriding methods in a subclass and describe execution flow when executing an overridden method.
1.4. you invoke overridden methods and describe how the method that is ultimately invoked is chosen.
1.5. you create and invoke overridden constructors.
1.6. you demonstrate control invocation of parent class constructors.
1.7. you create and use methods that accept generic data types.
1.8. you implement the ICloneable interface.
1.9. you implement the IComparable interface.
1.10. you describe generic interfaces as defined by the .Net framework.
1.11. you organize classes.

Learning Objectives

1.a. Relate inheritance to other object-oriented features of the Visual Basic programming language.
1.b. Create applications that use inheritance features of the Visual Basic Programming language.
1.c. Differentiate between an abstract class, an interface and a generic data type.

2. Use external files in a Visual Basic program.

Assessment Strategies

2.1. Lab
2.2. Project
2.3. Quizzes

Criteria

You will know you are successful when

2.1. you describe how files and streams work.
2.2. you use the FileStream class for basic input and output.
2.3. you implement exception handling in an application that uses external files.
2.4. you read and write a text file in an application.
2.5. you read and write a binary file in an application.

2.6. you describe the basic framework of an XML document.
2.7. you create an XML file from scratch.
2.8. you use the XmlReader class in an application.
2.9. you use the XmlWriter class in an application.
2.10. you use classes, modules and namespaces to organize projects and make the code within reusable.

Learning Objectives

2.a. Create applications that use text and binary files.
2.b. Create applications that read and write to XML files.
2.c. Organize projects in a manner that is sensible and reusable.

3. Deploy a Visual Basic Client Application.

Assessment Strategies

3.1. Quiz
3.2. Lab
3.3. Project

Criteria

You will know you are successful when

3.1. you select all files, including database files, that are necessary for deployment of a client application.
3.2. you create a release build.
3.3. you deploy the release build to the client using XCopy.
3.4. you use ClickOnce to deploy a client application.
3.5. you configure ClickOnce from the perspective of prerequisites, file choice and update options.
3.6. you create an update installation for an existing client application.
3.7. you configure and complete a Setup project for a client application.
3.8. you use a Setup program to install a client application.
3.9. you use ClickOnce to deploy a database application.
3.10. you use a Setup program to deploy a database application.

Learning Objectives

3.a. Deploy a Visual Basic client application using XCopy, ClickOnce and a Setup program.
3.b. Deploy a Visual Basic database client application using ClickOnce and a Setup program.

4. Examine philosophical assumptions relative to ASP .Net.

Assessment Strategies

4.1. Quiz
4.2. Lab
4.3. Project

Criteria

You will know you are successful when

4.1. you describe the software necessary for the creation of an ASP .Net application.
4.2. you describe appropriate hardware necessary for an ASP .Net application.
4.3. you describe the components of the .Net Framework that affect an ASP .Net application.
4.4. you describe the role of the .aspx code in an ASP .Net application.
4.5. you describe the role of the Visual Basic code in an ASP .Net application.
4.6. you identify all of the files related to an ASP .Net application.
4.7. you describe how an ASP .Net application is compiled and run.
4.8. you switch between source and design view when creating an ASP .Net application.
4.9. you minimally test an ASP .Net application.
4.10. you debug an ASP .Net application.

Learning Objectives

4.a. Describes the components that are necessary to create an ASP .Net application.
4.b. Describe the three possible scenarios for creating an ASP .Net application.

5. Utilize server and validation controls in an ASP .Net application.

Assessment Strategies

5.1. Quiz

5.2. Lab
5.3. Project

Criteria

You will know you are successful when

5.1. you describe the difference between server controls and HTML controls.
5.2. you handle events invoked by server controls.
5.3. you use the variations of the button control in an ASP .Net application.
5.4. you use common input controls (text boxes, labels, check boxes and radio buttons) in an ASP .Net application.
5.5. you incorporate list controls in an ASP .Net application.
5.6. you describe the functionality of additional server controls and implements as necessary.
5.7. you use basic validation controls in an ASP .Net application.
5.8. you implement a validation summary control.
5.9. you describe the use of validation groups.
5.10. you use advanced validation controls that incorporate regular expressions.

Learning Objectives

5.a. Create an ASP .Net application that utilizes server controls.
5.b. Create an ASP .Net application that utilizes validation controls.

6. Implement ASP .Net web pages that properly manage state.

Assessment Strategies

6.1. Quiz
6.2. Lab
6.3. Project

Criteria

You will know you are successful when

6.1. you describe the scope of view state.
6.2. you use view state to properly manage a post-back.
6.3. you describe to scope of session state.
6.4. you articulate the effect that session state has on system memory.
6.5. you use session state to save and retrieve items.
6.6. you describe timeout issues relative to session state.
6.7. you set other session state options.
6.8. you describe the scope of application state.
6.9. you configure and implement application state for a web application.
6.10. you use application state events.
6.11. you compare session state to profiles.
6.12. you implement the use of profiles with authenticated users.
6.13. you implement profiles with anonymous users.

Learning Objectives

6.a. Create a web page that properly manages view state.
6.b. Create a series of web pages that properly manage session state.
6.c. Create a web application that properly manages application state.
6.d. Implement the use of profiles in an ASP .Net web application.

7. Apply built-in constructs to manage web page look and navigation.

Assessment Strategies

7.1. Quiz
7.2. Lab
7.3. Project

Criteria

You will know you are successful when

7.1. you describe the philosophical idea behind the use of master pages.
7.2. you create a new master page.

7.3. you create a new content page.
7.4. you convert a web site that does not use master pages to one that does.
7.5. you create and expose master page controls.
7.6. you create a web.sitemap file.
7.7. you implement the TreeView control
7.8. you implement the Menu control.
7.9. you implement the SiteMapPath control.
7.10. you apply an existing theme to an application.
7.11. you create a custom web site theme.

Learning Objectives

7.a. Create a web site that uses master pages and/or themes to make the look of all web pages consistent.
7.b. Implement built in navigation controls in a web site.

8. Implement database controls in ASP .Net.

Assessment Strategies

8.1. Quiz
8.2. Lab
8.3. Project

Criteria

You will know you are successful when

8.1. you describe ADO.NET 2.0 data classes.
8.2. you create an SQL data source.
8.3. you use the query builder to organize data for a web site.
8.4. you use the GridView control to display data.
8.5. you customize the GridView control to add additional fields.
8.6. you update the database using the GridView control.
8.7. you use events raised by the GridView control.
8.8. you implement the DetailsView control to collect data and update the database.
8.9. you use the FormView control in a web site.
8.10. you customize the templates that are contained within the FormView control.

Learning Objectives

8.a. Create a web site that uses SQL Server data sources.
8.b. Create a web site that uses the GridView, DetailsView and FormView controls.

9. Explore security issues in ASP .Net web sites.

Assessment Strategies

9.1. Quiz
9.2. Lab
9.3. Project

Criteria

You will know you are successful when

9.1. you describe how SSL connections work.
9.2. you describe how digital certificates work.
9.3. you describe the processing for obtaining and implementing a digital certificate.
9.4. you enable form-based authentication.
9.5. you create and manage roles within an authenticated web site.
9.6. you use the Login and Login status controls.
9.7. you implement the PasswordRecovery and ChangePassword controls.
9.8. you configure the web.config file to manage an authenticated web site.
9.9. you use the ASP .Net authentication classes in code to manage authenticated web pages.

Learning Objectives

9.a. Understand how to use SSL to encrypt a connection.
9.b. Create a web site that authenticates users.
9.c. Customize a web site experience for a user based upon the level of authentication.

10. Deploy a web-based application that uses ASP .Net.

Assessment Strategies

10.1. Quiz
10.2. Lab
10.3. Project

Criteria

You will know you are successful when

10.1. you use the Web Site Administration Tool to configure the web pages for deployment.
10.2. you use the IIS Management Console to prepare the web server for an ASP .Net application.
10.3. you describe the three ways to deploy an ASP .Net application.
10.4. you use the Copy Web Site command for XCopy deployment.
10.5. you invoke the aspnet_compiler command to precompile ASP .Net web pages.
10.6. you use the Publish Web Site command for precompiled deployment.
10.7. you create a Web Setup projects.
10.8. you use a configures and uses a Setup program.

Learning Objectives

10.a. Configure an ASP .Net web application in order to prepare it for deployment.
10.b. Deploy an ASP .Net web application using one of the three defined methods.