



Western Technical College

10152191 Database Development with .NET

Course Outcome Summary

Course Information

Description	This course allows students to use a .NET language with a database. Advanced topics include creation of controls, database manipulation using ADO.Net , reusable class creation and use, and integrating XML and ADO.Net .
Career Cluster	Information Technology
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	72

Pre/Corequisites

Prerequisite	10152190 Introduction to .NET
Prerequisite	10152118 Applied SQL

Textbooks

Murach's C#2015. Copyright 2016. Boehm, Anne. Publisher: Mike Murach & Associates, Inc. **ISBN-13:**978-1-890774-94-3. 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. Use .Net database objects to interact with a database.

Assessment Strategies

- 1.1. Project

Criteria

You will know you are successful when

- 1.1. you connect to a database
- 1.2. you implement the using block to leverage the IDisposable interface on .Net database objects.
- 1.3. you insert records to the database
- 1.4. you update records in the database
- 1.5. you delete records from the database
- 1.6. you query records from the database.

Learning Objectives

- 1.a. Review SQL statements for DML and DDL.
- 1.b. Identify .Net database objects
- 1.c. Use the USING statement with database objects to leverage the IDisposable interface
- 1.d. Summarize how to write SELECT statements
- 1.e. Summarize how to write UPDATE statements
- 1.f. Summarize how to write INSERT statements
- 1.g. Summarize how to write DELETE statements

2. Investigate data sources and datasets.

Assessment Strategies

- 2.1. Project

Criteria

You will know you are successful when

- 2.1. you choose a data source type.
- 2.2. you make and save connections to chosen database.
- 2.3. you choose relevant database objects from your data source.
- 2.4. you generate a control from a data source so the user can view the data.
- 2.5. you select the controls that are most appropriate for the user experience.
- 2.6. you write code to capture data errors.

Learning Objectives

- 2.a. Choose a data source type.
- 2.b. Make and save connections to a database.
- 2.c. Choose database objects for a data source.
- 2.d. Generate a DataGridView control from a data source.
- 2.e. Change controls associated with a data source.
- 2.f. Handle data errors (from providers, .NET errors, from DataGridView control).
- 2.g. Use the Dataset Designer.

3. Implement bound controls and parameterized queries.

Assessment Strategies

- 3.1. Project

Criteria

You will know you are successful when

- 3.1. you understand how to bind a control to a data source.
- 3.2. you setup a parameterized query for a bound control to result in accurate data selection.
- 3.3. you format a control for optimal user experience.

Learning Objectives

- 3.a. Format data displayed in a text box.
- 3.b. Bind a combo box to a data source.
- 3.c. Use code to work with a binding source.
- 3.d. Create a parameterized query.
- 3.e. Use code to work with a parameterized query.

4. Incorporate DataGridView Control.

Assessment Strategies

- 4.1. Project

Criteria

You will know you are successful when

- 4.1. you optimize user's experience through the use of view controls.
- 4.2. you use the Tab control for correct flow of form.
- 4.3. you incorporate design features to assist in form navigation.
- 4.4. you optimize form display through the use of built in tools.

Learning Objectives

- 4.a. Modify the properties of a DataGridView control.
- 4.b. Edit the columns of a DataGridView control.
- 4.c. Format the data in the columns.
- 4.d. Use DataGridView control to create a Master/Detail form.

5. Explore customer applications.

Assessment Strategies

- 5.1. Project

Criteria

You will know you are successful when

- 5.1. you create, modify, and verify master form according to project requirements.
- 5.2. you develop an interface so users can search the database.
- 5.3. you create, modify and update customer form according to project requirements.
- 5.4. you create, modify, and update incidents form according to project requirements.

Learning Objectives

- 5.a. Examine ways to enhance a customer maintenance application through code and the user interface.
- 5.b. Examine ways to develop a customer invoice display application through the user interface and the dataset schema.
- 5.c. Identify characteristics of a master form.
- 5.d. Search by state form
- 5.e. Update customer form
- 5.f. Update incidents form
- 5.g. Develop interactive form to apprise user of errors.

6. Write data access code using .NET.

Assessment Strategies

- 6.1. Project

Criteria

You will know you are successful when

- 6.1. you determine if functionality needs to be extended based on client needs.

- 6.2. you develop code that extends the functionality of .NET.
- 6.3. you document changes to functionality.

Learning Objectives

- 6.a. Create and work with connections.
- 6.b. Create and work with commands.
- 6.c. Use parameters in SQL statements.
- 6.d. Create and work with parameters.
- 6.e. Create and work with a data reader.
- 6.f. Execute action queries.
- 6.g. Execute queries that return a single value.

7. Explore files and data streams.

Assessment Strategies

- 7.1. Project

Criteria

You will know you are successful when

- 7.1. you import data files from an external source.
- 7.2. you determine the beginning and the end of a file.
- 7.3. you process each record in the data file per project requirements.

Learning Objectives

- 7.a. Explore the classes to manage directories, files, and paths.
- 7.b. Explore the FileStream class.
- 7.c. Work with text files (write, read, etc.)
- 7.d. Work with binary files (write, read, etc.)

8. Investigate XML files.

Assessment Strategies

- 8.1. Project

Criteria

You will know you are successful when

- 8.1. you import XML files from an external source.
- 8.2. you determine the beginning and the end of an XML file.
- 8.3. you process each record in the XML file per project requirements.

Learning Objectives

- 8.a. Identify an XML document.
- 8.b. Explore XML tags, declarations, and comments.
- 8.c. Explore XML attributes and elements.
- 8.d. Create a new XML file.
- 8.e. Open an existing XML file.
- 8.f. Edit an XML file.
- 8.g. Explore code that writes and XML document.
- 8.h. Use the XmlReader.