



## Course Outline

### Visual Studio 2008: ADO.NET 3.5

Course 6464A: Two days; Instructor-Led Preliminary Course Syllabus

#### Introduction

Elements of this syllabus are subject to change.

This two-day instructor-led course provides students with the knowledge and skills to access and modify data by using ADO.NET 3.5.

#### Audience

This course is intended for application developers who know how to create applications in Visual Studio 2005 or 2008.

#### At Course Completion

After completing this course, students will be able to:

- Describe the purpose and structure of ADO.NET 3.5.
- Explain the role of data providers in ADO.NET 3.5.
- List the technologies and techniques available for managing data with ADO.NET 3.5.
- Insert, update, and delete data by using ADO.NET Command objects.
- Implement transactions to control data integrity and concurrency.
- Define and use a DataSet for retrieving data.
- Use a DataSet to update a database.
- Use a DataSet as a local cache in an occasionally connected environment.
- Define LINQ queries for selecting data from an in-memory data structure.
- Use LINQ to SQL to query data in a database.
- Use LINQ to SQL to modify data and save changes to the database.
- Explain how to use the ADO.NET Entity Framework to map a database schema to a logical business model.
- Use the ADO.NET Entity Framework to query and manage data.
- Explain how Synchronization Services supports occasionally-connected solutions.
- Use Synchronization Services to download data from a SQL Server database.
- Use Synchronization Services to upload data to a SQL Server database.

#### Prerequisites

Before attending this course, students should have intermediate experience developing applications by using previous versions of Microsoft Visual Studio at level 200.

#### Course Outline

##### ***Module 1: Getting Started with ADO.NET 3.5***

This module explains how to connect to a database and retrieve data by using ADO.NET commands.



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### Lessons

- The Structure of ADO.NET 3.5
- Connecting to a Database and Retrieving Data
- Best Practices for Managing Connections and Performing Queries

### Lab: Connecting to a Database and Retrieving Data

- Connecting to a Database
- Executing a Simple Query
- Executing a Query That Returns a Result Set
- Executing a Query That Requires Parameters

After completing this module, students will be able to:

- Describe the purpose and structure of ADO.NET 3.5.
- Explain the role of data providers in ADO.NET 3.5.
- List the technologies and techniques available for managing data with ADO.NET 3.5.

### *Module 2: Modifying Data by Using ADO.NET Commands*

This module explains how to modify data by using ADO.NET commands.

### Lessons

- Inserting, Updating, and Deleting Data
- Managing Data Integrity and Concurrency

### Lab: Modifying Data by Using ADO.NET Commands

- Inserting, Updating, and Deleting Data in a Database
- Implementing Transactional Updates
- Executing Commands Asynchronously

After completing this module, students will be able to:

- Insert, update, and delete data by using ADO.NET Command objects.
- Implement transactions to control data integrity and concurrency.

### *Module 3: Querying and Maintaining Data by Using DataSets*

This module explains how to use DataSets to fetch and modify data, and act as a local data cache.

### Lessons

- Creating and Using a DataSet to Retrieve Data
- Updating a Database by Using a DataSet
- Using a DataSet in an Occasionally Connected Environment

### Lab: Using a DataSet to Retrieve and Modify Data

- Creating a Typed DataSet
- Retrieving Data into a DataSet





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- Modifying Data in a DataSet
- Saving a DataSet and Resolving Conflicts

After completing this module, students will be able to:

- Define and use a DataSet for retrieving data.
- Use a DataSet to update a database.
- Use a DataSet as a local cache in an occasionally connected environment.

### ***Module 4: Querying and Maintaining Data by Using LINQ***

This module explains how to use LINQ to retrieve and update data.

#### **Lessons**

- Querying In-Memory Data by Using LINQ Query Expressions
- Retrieving Data by Using LINQ to SQL
- Modifying Data by Using LINQ to SQL

#### **Lab: Using LINQ to SQL to Retrieve and Modify Data**

- Querying Data by Using LINQ to SQL Query Expressions
- Retrieving Data by Using LINQ to SQL Entity Classes
- Modifying Data by Using LINQ to SQL

After completing this module, students will be able to:

- Define LINQ queries for selecting data from an in-memory data structure.
- Use LINQ to SQL to query data in a database.
- Use LINQ to SQL to modify data and save changes to the database.

### ***Module 5: Implementing an Entity Model by Using the ADO.NET Entity Framework***

This module explains how to use the Entity Framework to implement an entity data model for querying and maintaining data.

#### **Lessons**

- Creating an Entity Data Model by Using the ADO.NET Entity Framework
- Querying and Modifying Data by Using the ADO.NET Entity Framework

#### **Lab: Using the ADO.NET Entity Framework to Implement an Entity Data Model**

- Creating an Entity Data Model
- Querying and Modifying Data in an Entity Data Model
- Instantiating and Manipulating Entities by Using Object Services

After completing this module, students will be able to:

- Explain how to use the ADO.NET Entity Framework to map a database schema to a logical business model.
- Use the ADO.NET Entity Framework to query and manage data.



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### ***Module 6: Building Occasionally Connected Solutions by Using Synchronization Services***

This module explains how to use Synchronization Services to build occasionally connected solutions.

#### **Lessons**

- Understanding Microsoft Synchronization Services
- Downloading Data by Using Synchronization Services
- Uploading Data by Using Synchronization Services

#### **Lab: Building Occasionally Connected Solutions by Using Synchronization Services**

- Modifying a Database Schema to Support Synchronization
- Downloading Data to a Client Computer
- Uploading Data Changes to the Database

After completing this module, students will be able to:

- Explain how Synchronization Services supports occasionally-connected solutions.
- Use Synchronization Services to download data from a SQL Server database.
- Use Synchronization Services to upload data to a SQL Server database.