

**ITT Technical Institute**

**SD4650**

**Application Development Using Visual  
Studio II**

**Onsite and Online Course**

**SYLLABUS**

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**Credit hours:** 4.5

**Contact/Instructional hours:** 56 (34 Theory Hours, 22 Lab Hours)

**Prerequisite(s) and/or Corequisite(s):**

Prerequisite: SD4550 Application Development Using Visual Studio I or equivalent

**Course Description:**

This course examines techniques to develop interactive Windows based applications in the Microsoft Visual Studio environment.

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## COURSE SUMMARY

### COURSE DESCRIPTION

This course examines techniques to develop interactive Windows based applications in the Microsoft Visual Studio environment.

### MAJOR INSTRUCTIONAL AREAS

1. Visual Studio Features and Functionality
2. Windows Application Development
3. Integrating Device Features
4. Maps and Geo Information Services
5. Connectivity and the Web
6. Extensible Application Markup Language (XAML)
7. Application Enhancement
8. Storing and Synchronizing Data
9. Security
10. Windows Store

### COURSE LEARNING OBJECTIVES

By the end of this course, you should be able to:

1. Demonstrate proficiency using the features and languages included in the Visual Studio IDE to develop Windows, web, Windows Store, and mobile applications.
2. Develop Windows, web, Windows Store, and mobile applications.
3. Enhance applications using industry-recognized best practices.
4. Use XAML to develop Windows, web, and Windows Store applications.
5. Integrate functionality from various device features into Windows applications.
6. Manage and share data within applications across devices and networks.
7. Integrate security features into Windows applications.
8. Describe various methods used to package and distribute applications.

## COURSE OUTLINE

### MODULE 1: INTEGRATED DEVELOPMENT ENVIRONMENT

#### COURSE LEARNING OBJECTIVES COVERED

- Demonstrate proficiency using the features and languages included in the Visual Studio IDE to develop Windows, web, Windows Store, and mobile applications.
- Develop Windows, web, Windows Store, and mobile applications.

#### TOPICS COVERED

- Create and Configure Solutions and Projects
- Source Code Control
- Features and Languages of Visual Studio IDE

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 6, 13, and 16.	No	5.5 hr
<b>Lesson:</b> Study the lesson for this module.	No	1.5 hr
<b>Discussion:</b> Participate in the discussion titled “Features of the Visual Studio IDE.”	Yes	N/A
<b>Lab:</b> Complete the lab titled “Configuring a Development Virtual Machine.”	Yes	N/A
<b>Project:</b> Read and begin the project.	No	1 hr

Total Out-Of-Class Activities: 8 Hours

## MODULE 2: MODELING APPLICATION REQUIREMENTS

### COURSE LEARNING OBJECTIVES COVERED

- Develop Windows, web, Windows Store, and mobile applications.
- Enhance applications using industry-recognized best practices.

### TOPICS COVERED

- Code Snippets
- Refactoring Code
- Modeling with the Class Designer
- Unit Tests
- XML Comments

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 7, 8, 10, 11, and 12.	No	7.5 hr
<b>Lesson:</b> Study the lesson for this module.	No	2 hr
<b>Discussion:</b> Participate in the discussion titled “Refactoring Code with Visual Studio.”	Yes	N/A
<b>Exercise:</b> Submit the exercise titled “Creating an Object Model.”	Yes	3 hr
<b>Lab 1:</b> Complete the lab titled “Creating an Object Model with the Class Designer.”	Yes	N/A
<b>Lab 2:</b> Complete the lab titled “Using Code Snippets and Creating Unit Tests.”	Yes	N/A
<b>Project:</b> Continue work on Project Part 1.	No	4 hr

Total Out-Of-Class Activities: 16.5 Hours

## MODULE 3: XAML AND WINDOWS STORE APPLICATIONS

### COURSE LEARNING OBJECTIVES COVERED

- Enhance applications using industry-recognized best practices.
- Use XAML to develop Windows, web, and Windows Store applications.
- Integrate functionality from various device features into Windows applications.
- Describe various methods used to package and distribute applications.

### TOPICS COVERED

- Using Windows Presentation Foundation
- Creating Windows Store Applications
- Using Silverlight
- Using Resource Files

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 18, 20, 22, 23, and 39.	No	7.5 hr
<b>Lesson:</b> Study the lesson for this module.	No	2 hr
<b>Exercise:</b> Submit the exercise titled “Windows Store Applications.”	Yes	2 hr
<b>Lab 1:</b> Complete the lab titled “Creating an Application Using Windows Presentation Foundation.”	Yes	N/A
<b>Lab 2:</b> Complete the lab titled “Creating a Website Using Silverlight.”	Yes	N/A
<b>Project:</b> Submit Project Part 1.	Yes	4 hr

Total Out-Of-Class Activities: 15.5 Hours

## MODULE 4: DATA-DRIVEN DEVELOPMENT

### COURSE LEARNING OBJECTIVES COVERED

- Manage and share data within applications across devices and networks.

### TOPICS COVERED

- Using Dynamic Data Scaffolding
- Using LINQ to SQL
- Using Entity Framework
- Using Entity Model
- Designing Reports

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 24, 29, 30, and 31.	No	11 hr
<b>Lesson:</b> Study the lesson for this module.	No	2 hr
<b>Discussion:</b> Participate in the discussion titled “Comparing Dynamic Data, LINQ to SQL, and the Entity Framework.”	Yes	N/A
<b>Lab 1:</b> Complete the lab titled “Using Dynamic Data Scaffolding.”	Yes	N/A
<b>Lab 2:</b> Complete the lab titled “Using an Entity Model.”	Yes	N/A
<b>Exercise:</b> Submit the exercise titled “Designing and Reviewing a Reporting Strategy.”	Yes	2.5 hr
<b>Project:</b> Begin work on Project Part 2.	No	4 hr

Total Out-Of-Class Activities: 19.5 Hours

## MODULE 5: CLOUD AND COMMUNICATION

### COURSE LEARNING OBJECTIVES COVERED

- Manage and share data within applications across devices and networks.
- Integrate security features into Windows applications.

### TOPICS COVERED

- Azure
- Windows Communication Foundation (WCF)
- Client Services
- Occasionally Connected Applications
- WCF RIA Services

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 26, 32, 34, 35, and 36.	No	8 hr
<b>Lesson:</b> Study the lesson for this module.	No	2 hr
<b>Discussion:</b> Participate in the discussion titled “Challenges of Occasionally Connected Applications.”	Yes	N/A
<b>Lab:</b> Complete the lab titled “Creating a WCF Service and Consumer.”	Yes	N/A
<b>Exercise:</b> Submit the exercise titled “Features of Azure.”	Yes	2 hr
<b>Project:</b> Submit Project Part 2.	Yes	4 hr
<b>Final Exam:</b> Prepare for the final exam.	No	5 hr

Total Out-Of-Class Activities: 21 Hours

## MODULE 6: APPLICATION PACKAGING AND DEPLOYMENT

### COURSE LEARNING OBJECTIVES COVERED

- Demonstrate proficiency using the features and languages included in the Visual Studio IDE to develop Windows, web, Windows Store, and mobile applications.
- Develop Windows, web, Windows Store, and mobile applications.
- Enhance applications using industry-recognized best practices.
- Use XAML to develop Windows, web, and Windows Store applications.
- Integrate functionality from various device features into Windows applications.
- Manage and share data within applications across devices and networks.
- Integrate security features into Windows applications.
- Describe various methods used to package and distribute applications.

### TOPICS COVERED

- Configuration Files
- Versioning and Signing Assemblies
- Packaging and Deployment

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
<b>Reading:</b> Johnson, Chapters 37, 47, and 49.	No	4.5 hr
<b>Lesson:</b> Study the lesson for this module.	No	1.5 hr
<b>Lab:</b> Complete the lab titled “Creating an Application Deployment Package.”	Yes	N/A
<b>Project:</b> Submit Project Part 3.	Yes	3 hr
<b>Final Exam:</b> Take the final exam.	Yes	N/A

Total Out-Of-Class Activities: 9 Hours



## EVALUATION AND GRADING

### EVALUATION CRITERIA

The graded assignments will be evaluated using the following weighted categories:

CATEGORY	WEIGHT
Discussion	10%
Lab	25%
Exercise	15%
Project	30%
Final Exam	20%
TOTAL	100%

### GRADE CONVERSION

The final grades will be calculated from the percentages earned in the course, as follows:

GRADE	PERCENTAGE
A (4.0 )	90–100%
B+ (3.5 )	85–89%
B (3.0 )	80–84%
C+ (2.5 )	75–79%
C (2.0 )	70–74%
D+ (1.5 )	65–69%
D (1.0)	60–64%

)	
F (0.0 )	<60%

## LEARNING MATERIALS AND REFERENCES

### REQUIRED RESOURCES

#### COMPLETE TEXTBOOK PACKAGE

Johnson, B. (2014). *Professional Visual Studio 2013*. Indianapolis, IN: Wrox, a Wiley brand.

#### OTHER ITEMS

- Microsoft Office
- Microsoft Visio
- VMWare Player 6.0 (or later)
- External USB hard drive to host the virtual machines specifically required for this program
- Visual Studio 2013 Community Edition \*
- SQL Server Express \*
- Windows Phone SDK \*

\* These software titles are available for download from ITT Technical Institute's DreamSpark software download site. For more information, please review the [DreamSpark Implementation Guide](#), available at the ITT Technical Institute Student Portal> Resources> Download Center.

### RECOMMENDED RESOURCES

- [ITT Tech Virtual Library](#) (accessed via Student Portal <https://studentportal.itt-tech.edu>)
  - School of Study> School of Information Technology> Databases> Books24x7>
    - Burns, K. (2012). *Beginning Windows 8 application development: XAML edition*. New York, NY: Apress.
    - Champion, T. (2013). *Pro business metro style apps in XAML*. New York, NY: Apress.
    - Cibraro, P., Claeys, K., Cozzolino, F., & Grabner, J. (2010). *Professional WCF 4: Windows communication foundation with .NET 4*. Indianapolis, IN: John Wiley & Sons.
    - Driscoll, B., Gupta, N., Vettor, R., Hirani, Z., & Tenny, L. (2013). *Entity framework 6 recipes (2nd ed.)*. New York, NY: Apress.

- Freeman, A. (2012). *Metro revealed: Building Windows 8 apps with XAML and C#*. New York, NY: Apress.
- Lair, R. (2012). *Beginning Silverlight 5 in C# (4th ed.)*. New York, NY: Apress.
- Lecrenski, N., Holland, D., Sanders, A., & Ashley, K. (2013). *Professional Windows 8 programming: Application development with C# and XAML*. Indianapolis, IN: John Wiley & Sons.
- Li, H. (2009). *Introducing Windows Azure: An introduction to cloud computing using Microsoft Windows Azure*. New York, NY: Apress.
- Liberty, J. (2012). *Windows 8 XAML primer*. New York, NY: Apress.
- Liberty, J., Japikse, P., & Galloway, J. (2013). *Pro Windows 8.1 development with XAML and C#*. New York, NY: Apress.
- Nagel, C., Glynn, J., & Skinner, M. (2014). *Professional C# 5.0 and .NET 4.5.1*. Indianapolis, IN: John Wiley & Sons.
- Redkar, T., & Guidici, T. (2011). *Windows Azure platform (2nd ed.)*. New York, NY: Apress.
- Sempf, B., Sphar, C., & Davis, S. R. (2013). *C# 5.0 all-in-one for dummies*. Hoboken, NJ: John Wiley & Sons.
- Troelsen, A. (2012). *Pro C# 5.0 and the .NET 4.5 framework (6th ed.)*. New York, NY: Apress.
- Vermeir, N. (2013). *Windows 8 app projects: XAML and C# edition*. New York, NY: Apress.
- Other References
  - .NET Azure Documentation: <http://azure.microsoft.com/en-us/develop/net/>
  - ASP.NET: <http://www.asp.net/>
  - Microsoft Developer Network: <https://msdn.microsoft.com/en-us/default.aspx>
  - Windows Dev Center: <https://dev.windows.com/en-us>

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## INSTRUCTIONAL METHODS AND TEACHING STRATEGIES

The curriculum employs a variety of instructional methods that support the course objectives while fostering higher cognitive skills. These methods are designed to encourage and engage you in the learning process in order to maximize learning opportunities. The instructional methods include but are not limited to lectures, collaborative learning options, use of technology, and hands-on activities.

To implement the above-mentioned instructional methods, this course uses several teaching strategies, such as lessons and hands-on labs. Your progress will be regularly assessed through a variety of assessment tools including discussion, lab, exercise, project, and final exam.

## OUT-OF-CLASS WORK

For purposes of defining an academic credit hour for Title IV funding purposes, ITT Technical Institute considers a quarter credit hour to be the equivalent of: (a) at least 10 clock hours of classroom activities and at least 20 clock hours of outside preparation; (b) at least 20 clock hours of laboratory activities; or (c) at least 30 clock hours of externship, practicum or clinical activities. ITT Technical Institute utilizes a “time-based option” for establishing out-of-class activities which would equate to two hours of out-of-class activities for every one hour of classroom time. The procedure for determining credit hours for Title IV funding purposes is to divide the total number of classroom, laboratory, externship, practicum and clinical hours by the conversion ratios specified above. A clock hour is 50 minutes.

A credit hour is an artificial measurement of the amount of learning that can occur in a program course based on a specified amount of time spent on class activities and student preparation during the program course. In conformity with commonly accepted practice in higher education, ITT Technical Institute has institutionally established and determined that credit hours awarded for coursework in this program course (including out-of-class assignments and learning activities described in the “Course Outline” section of this syllabus) are in accordance with the time-based option for awarding academic credit described in the immediately preceding paragraph.

## ACADEMIC INTEGRITY

All students must comply with the policies that regulate all forms of academic dishonesty or academic misconduct. For more information on the academic honesty policies, refer to the Student Handbook and the School Catalog.

## INSTRUCTOR DETAILS

Instructor Name	
Office Hours	
Contact Details	

*(End of Syllabus)*