



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009

(i.e. 2003-2004)

NEXT REVIEW: 2013-2014

(i.e. 2008-2009)

STATUS: A

(A, I, D)

COURSE TITLE: Microsoft Application Development Foundation – C#

COMMON COURSE NUMBER: CTS 1460C

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS:

(Voc. Course ONLY)

Lecture: 40

Lab: 8

Clinic:

Other:

PREREQUISITE(S): COP 1337C (with a grade of C, or higher)

COREQUISITE(S):

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum): This Microsoft IT Academy course teaches students fundamentals of the C# programming language and the .Net framework including threads, collections, serialization and security. The skills developed in this class will help prepare students for MCTS certification.*

General Education Requirements – Associate of Arts Degree (AA), meets Area(s):

Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s):

Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s):

Area

UNIT TITLES

1. Developing applications that use system types and collections
2. Implementing service processes, threading, and application domains in a .NET Framework application
3. Embedding configuration, diagnostic, management, and installation features into a .NET Framework application
4. Implementing serialization and input/output functionality in a .NET Framework application
5. Improving the security of the .NET Framework applications by using the .NET Framework 2.0 security features
6. Implementing interoperability, reflection, and mailing functionality in a .NET Framework application
7. Implementing globalization, drawing, and text manipulation functionality in a .NET Framework application



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ASSESSMENT:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

Evaluation instruments will include written and/or skills-based examinations and individual in-class and/or take-home assignments. Evaluation methods may also include group in-class and/or take-home assignments.

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

** General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*



Common Course Number: CTS 1460C

UNITS

Unit 1 Developing applications that use system types and collections

General Outcome: This unit introduces students to the basic data types of C# and the classes and interfaces of generic collections in .Net.

1.0 The student shall: Develop C# applications that utilize basic data types and generic collections

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

1.1 Manage data in a .NET Framework application by using the .NET Framework 2.0 system types

1.2 Manage a group of associated data in a .NET Framework application by using collections

1.3 Improve type safety and application performance in a .NET Framework application by using generic collections

1.4 Manage data in a .NET Framework application by using specialized collections

1.5 Implement .NET Framework interfaces to cause components to comply with standard contracts

1.6 Control interactions between .NET Framework application components by using events and delegates



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Unit 2 Implementing service processes, threading, and application domains in a .NET Framework application

General Outcome: This unit covers development of C# threads and processes within the .Net framework

2.0 The student shall: Develop multi-threaded C# applications.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

2.1 Implement, install, and control a service

2.2 Develop multithreaded .NET Framework applications

2.3 Create a unit of isolation for common language runtime in a .NET Framework application by using application domains



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Unit 3 Embedding configuration, diagnostic, management, and installation features into a .NET Framework application

General Outcome: This unit familiarizes the student with the C# configuration control capabilities of the .Net environment.

3.0 The student shall: Develop applications that utilize .Net framework to manage application performance and adherence to specifications.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

3.1 Embed configuration management functionality into a .NET Framework application.

3.2 Create a custom Microsoft Windows Installer for the .NET Framework components by using the System.Configuration.Install namespace, and configure the .NET Framework applications by using configuration files, environment variables, and the .NET Framework Configuration tool

3.3 Manage an event log by using the System.Diagnostics namespace

3.4 Manage system processes and monitor the performance of a .NET Framework application by using the diagnostics functionality of the .NET Framework 2.0

3.5 Debug and trace a .NET Framework application by using the System.Diagnostics namespace

3.6 Embed management information and events into a .NET Framework application



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Unit 4 Implementing serialization and input/output functionality in a .NET Framework application

General Outcome: This unit covers C# input and output classes.

4.0 The student shall: Develop programs utilizing the .Net Framework that access the local file system and serialize program data for transfer to remote sites.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

4.1 Serialize or deserialize an object or an object graph by using runtime serialization techniques

4.2 Control the serialization of an object into XML format by using the System.Xml.Serialization namespace

4.3 Implement custom serialization formatting by using the Serialization Formatter classes

4.4 Access files and folders by using the File System classes

4.5 Manage byte streams by using Stream classes

4.6 Manage the .NET Framework application data by using Reader and Writer classes

4.7 Compress or decompress stream information in a .NET Framework and improve the security of application data by using isolated storage



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Unit 5 Improving the security of the .NET Framework applications by using the .NET Framework 2.0 security features

General Outcome: This unit introduces students to writing secure applications in C#.

5.0 The student shall: Develop secure applications utilizing the .Net framework.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

5.1 Implement code access security to improve the security of a .NET Framework application

5.2 Implement access control by using the System.Security.AccessControl classes

5.3 Implement a custom authentication scheme by using the System.Security.Authentication classes. Encrypt, decrypt, and hash data by using the System.Security.Cryptography classes

5.4 Control permissions for resources by using the System.Security.Permission classes

5.5 Control code privileges by using System.Security.Policy classes

5.6 Access and modify identity information by using the System.Security.Principal classes



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Unit 6 Implementing interoperability, reflection, and mailing functionality in a .NET Framework application

General Outcome: This unit covers the creation of C# applications that are able to interact with code developed in another programming language.

6.0 The student shall: Develop applications that utilize and interact with applications written in another programming language or framework.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

6.1 Expose COM components to the .NET Framework and the .NET Framework components to COM

6.2 Call unmanaged DLL functions in a .NET Framework application, and control the marshaling of data in a .NET Framework application

6.3 Implement reflection functionality in a .NET Framework application and create metadata, Microsoft intermediate language (MSIL), and a PE file by using the System.Reflection.Emit namespace.

6.4 Send electronic mail to a Simple Mail Transfer Protocol (SMTP) server for delivery from a .NET Framework application



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Unit 7 Implementing globalization, drawing, and text manipulation functionality in a .NET Framework application

General Outcome: This unit introduces the student to graphics capability in C# and creating applications for other spoken languages.

7.0 The student shall: Develop graphical and international applications using the .Net framework

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

7.1 Format data based on culture information

7.2 Enhance the user interface of a .NET Framework application by using the System.Drawing namespace

7.3 Enhance the text handling capabilities of a .NET Framework application (refer System.Text namespace), and search, modify, and control text in a .NET Framework application by using regular expressions