

**Computer Programming Department**  
**Business/Public Service Division**  
**GREENVILLE TECHNICAL COLLEGE**

**COURSE SYLLABUS**

**Course Title:** Visual Basic.Net I

**Course Number:** CPT 186

**Lecture hours per week:** 3.0

**Lab/Clinic Hours:**

**Semester credit hours:** 3.0

**Prerequisite:** CPT 101 or CPT 113, MAT 102 or higher

**Catalog Course Description:** This course introduces the student to development of Visual Basic Windows applications using the Microsoft.Net framework.

**Purpose of the Course:** To teach the student Visual Basic programming using the Microsoft.NET framework.

**Required text(s) or other materials:**

1. Programming in Visual Basic.NET 2008, 7<sup>th</sup> Edition; Bradley & Millspaugh; McGraw – Hill Publishing; ISBN: 978-0-07-351720-9
2. **NOTE:** Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

**COLLEGE-WIDE STUDENT LEARNING OUTCOMES**

1. **Communication** – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.
2. **Information Technology and Technological Literacy** – Students will demonstrate competency in using computer technology within a field of study.
3. **Critical Thinking/Reasoning** – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.
4. **Professional and Personal Responsibility** – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.

5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

*Approved March 26, 2009*

<b>COMPUTER TECHNOLOGY PROGRAM STUDENT LEARNING OUTCOMES</b>
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Upon successful completion of the CPT/Programming program, the graduate will be able to:

1. Students will be able to analyze, design, develop, and document solutions that will satisfy the information needs of business users using established design methodologies and standards.
2. Students will be able to design, create, test, and document logical programming solutions to prescribed specifications following established standards and using current development environments and languages for application development and database management.
3. Students will be able to demonstrate the knowledge and ability to install and maintain microcomputer hardware and operating system software.
4. Students will be able to demonstrate the use of a minimum of three business application software packages.
5. Students will be able to demonstrate fundamental team building, project management, and presentation skills by participating in team projects that include team goals and values, a development methodology for documentation and coding, group presentations, and exposure to topics such as diversity, time management, and goal setting.
6. Students will be able to demonstrate the ability to take initiative, assume responsibility, and work under pressure with minimum supervision by successfully completing "hands-on" computer lab assignments.

<b>CPT 186 COURSE OUTCOMES</b>
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Students who successfully complete this course will have demonstrated the skills required to accomplish the following objectives with a minimum competence level of 70 percent.

1. Students will be able to demonstrate the ability to take initiative by completing a lab assignment with minimal supervision.
2. Students will be able to demonstrate the ability to work under pressure, and show responsibility by completing lab assignments.
3. Students will be able to demonstrate the ability to design, create, and test a GUI (Graphical User Interface) programming solution according to a specified set of instructions by completing a lab assignment in Visual Basic.NET that incorporates variables, properties, methods, events, various controls and programming constructs, user defined functions that return a value, dialog boxes, validation methods and exception handling.
4. Students will be able to demonstrate the ability to create printed output by completing a lab assignment using the PrintDocument class to produce output for the printer or the screen.

5. Students will be able to demonstrate the ability to debug Visual Basic project solutions by effectively identifying and correcting syntax errors, run-time errors, and logic errors by completing a debugging lab assignment.
6. Students will be able to demonstrate the ability to access and display information stored in a database using ADO.NET to complete a lab assignment.
7. Students will be able to demonstrate the ability to process data stored in a disk file by completing a lab assignment using iostreams to read and write data stored in a disk file.

*The objectives of the CPT 186 course are intended to meet the CPT/Programming program competencies numbered 2 and 6 above.*

<b>CPT 186 – Main Topics</b>
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**Week 1:**

*Introduction Assignment Due*

**Chapter 1 – Introduction to Visual Basic.NET 2008**

- Writing Windows Applications with VB
- Programming Languages - Procedural, Event Driven, and Object-Oriented
- Writing VB Projects
- The Visual Studio Environment
- Writing Your First VB Project; A Sample Printout
- Finding and Fixing Errors
- Visual Studio Help
- Your Hands-On Programming Example

**Week 2:**

*Extra Credit Chapter 1 Assignment Due*

**Chapter 2 – User Interface Design**

- Introducing More Controls
- Working with Multiple Controls
- Designing Your Applications for User Convenience
- Coding for the Controls
- Your Hands-On Programming Example
- Good Programming Habits

**Week 3:**

*Chapter 2 Assignment Due*

**Chapter 3 – Variables, Constants, & Calculations**

- Data —Variables and Constants
- Calculations
- Formatting Data for Display
- A Calculation Programming Example
- Handling Exceptions

- Displaying Messages in Message Boxes
- Counting and Accumulating Sums
- Your Hands-On Programming Example

**Week 4:**

*Chapter 3 Assignment Due*

**\*\*\*\*\* Test 1 \*\*\*\*\*** *Chapters 1, 2, and 3 Hands On Due*

**Week 5:**

**Chapter 4 – Decisions & Conditions**

- If Statements
- Boolean Expressions
- Nested If Statements
- Using If Statements with Radio Buttons and Check Boxes
- Enhancing Message Boxes
- Input Validation
- The Case Structure
- Sharing an Event Procedure

**Chapter 4 – Decisions & Conditions (continued)**

- Calling Event Procedures
- Your Hands-On Programming Example
- Debugging VB Projects
- Debugging Step-by-Step Tutorial

*Chapter 4 Assignment Due*

**Week 6:**

**Chapter 5 – Menus, Common Dialog Boxes, Sub-Procedures, & Function Procedures**

- Menus
- Common Dialog Boxes
- Creating Context Menus
- Writing General Procedures
- Basing a New Project on an Existing Project

Your Hands-On Programming Example

*Chapter 5 Assignment Due*

**Week 7:**

**\*\*\*\*\* Test 2 \*\*\*\*\*** *Chapters 4 and 5 Hands On Due*

**Week 8:**

**Chapter 6 – Multiform Projects**

- Using Multiple Forms
- An About Box
- A Splash Screen
- Using the Methods and Events of Forms
- Variables and Constants in Multiform Projects
- Running Your Program Outside the IDE
- Your Hands-On Programming Example

*Chapter 6 Assignment Due*

**Week 9:**

**Chapter 7 – Lists, Loops, & Printing**

- List Boxes and Combo Boxes
- Do/Loops
- For/Next Loops
- Making Entries Appear Selected
- Sending Information to the Printer
- Your Hands-On Programming Example

*Chapter 7 Assignment Due*

**Week 10:**

**Chapter 8 – Arrays**

- Single-Dimension Arrays
- For Each/Next Statements
- Structures
- Using Array Elements for Accumulators
- Table Lookup

**Chapter 8 – Arrays (continued)**

- Using List Boxes with Arrays
- Multidimensional Arrays
- Your Hands-On Programming Example

*Chapter 8 Assignment Due*

**Week 11:**

**\*\*\*\*\* Test 3 \*\*\*\*\*** *Chapters 6, 7, and 8 Hands On Due*

**Week 12:**

**Chapter 9 – Web Applications**

- Visual Basic and Web Programming
- Types of Web Sites
- Creating a Web Site Laying Out Web Forms
- Navigating Web Pages
- Using the Validator Controls
- Maintaining State
- AJAX
- Managing Web Projects
- Some Web Acronyms
- Your Hands-On Programming Example

*Chapter 9 Assignment Due*

**Week 13:**

*Paper on the adoption of VB.NET around the world Due*

**Week 14:**

**Chapter 10 – Database Applications**

- Databases
- Using ADO.NET and VB
- Creating a Database Application
- Binding Individual Data Fields
- Selecting Records from a List
- Selecting Records Using Web Forms
- LINQ
- Your Hands-On Programming Example

*Chapter 10 Assignment Due*

**Week 15:**

**Chapter 11 – Data Files**

- Data Files
- Simple VB File I/O
- .NET File Handling
- Using the File Common Dialog Boxes
- Saving the Contents of a List Box
- XML Files
- Your Hands-On Programming Example

*Chapter 11 Assignment Due*

**Chapter 13 – Graphics, Animation, Sound, and Drag-and-Drop**

- Graphics in Windows and the Web
- The Graphics Environment
- Random Numbers
- Simple Animation
- The Timer Component
- The Scroll Bar Controls
- Playing Sounds
- Playing Videos
- Drag-and-Drop Programming
- Your Hands-On Programming Example

*Extra Credit Chapter 13 Assignment Due*

**\*\*\*\*\*Comprehensive Final Examination \*\*\*\*\***

<b>CPT 186 – Course Specific Requirements</b>
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A USB portable storage device such as a flash drive will be needed for coursework storage.

**SPECIAL NOTE TO ONLINE STUDENTS:** The final exam for online students will be administered on the Barton Campus and will be scheduled at a time determined by the department.

## CPT 186 – EVALUATION AND GRADING INFORMATION

### GRADING POLICY

- **Twenty (20) percent** of the final grade will be based on successful completion of programming assignments and a written assignment. **Penalties for inaccurate results will be assessed per assignment.** The written assignment is a one – two page paper on the adoption of Visual Basic.NET 2008 around the world. A rubric for assessment of the written assignment will be provided.
- **Fifty-five (55) percent** of the final grade will be based on Lecture/Lab quiz/test grade averages.
- **Twenty-five (25) percent** of the final grade will be based on the comprehensive final examination.

**All assignments (i.e., labs, projects, research papers, etc.) for this course must be completed and submitted to the instructor by the due date established in order to receive credit for the assignment.**

Final letter grades will be issued as follows:

A	=	90 - 100	points
B	=	80 - 89	points
C	=	70 - 79	points
D	=	60 - 69	points
F	=	0 - 59	points

**NOTE: ALL TESTS AND EXAMS ARE RETAINED BY THE INSTRUCTOR.**

### **READ THIS SYLLABUS CAREFULLY**

You should read this syllabus carefully and ask your instructor about *any* aspects that you do not understand. The syllabus is an agreement between you and your instructor concerning course objectives, course content, grading, and other policies and procedures particular to this course. The above information is specific to the course. Three additional documents are provided as attachments and *are considered a part of this syllabus*:

#### **Attachment 1:**

Each instructor will provide a supplement to this syllabus. The supplement will include: a week-by-week plan of instruction based on the section in which you are enrolled; your instructor's name, office hours and/or office location; and your instructor's contact information and recommended best methods to contact your instructor.

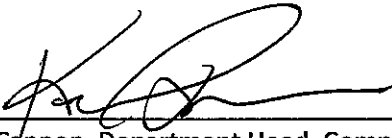
#### **Attachment 2:**

The Department responsible for developing and teaching has policies and procedures in place to assure quality instruction for all students. These are attached as "Departmental Policies and Procedures."

Attachment 3:

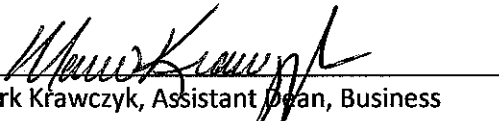
Please note that it is your responsibility to read the current Student Handbook included in Greenville Technical College's Catalog. (See website.) The Student Handbook addresses specific academic and student conduct policies and procedures. Excerpts from the Student Handbook representing the policies and procedures most often referred to in working with students are provided for your convenience as "Attachment 3."

Approved by:



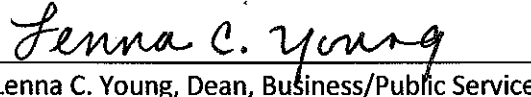
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13 Aug 10  
Date

*This syllabus will remain in effect until revised or reviewed no later than August 2011.*