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360-01 Introduction to Visual Basic

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COURSE SYLLABUS

INFO 360

Fall 2010

INSTRUCTOR:

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TEXTS:

ISBN 978-0-07-351725-4 Bradley: Programming in Visual Basic 2008, 7e by Julia Bradley Anita Millspaugh

Online Learning Center:

<http://www.mhhe.com/vb2010/>

Software Location:

<http://www.microsoft.com/express/vb/default.aspx> - Visual Basic Express

<http://www.microsoft.com/express/vwd/Default.aspx> - Visual Web Developer

Additional Items:

Software: Visual Basic Express and Visual Web Developer from msdn.microsoft.com/express, Microsoft Windows Vista or XP; Microsoft Office 2007; Internet Explorer 7. Instructor will provide information on how to use these packages.

Handouts: Additional handouts may be required. Instructor will provide information on obtaining this material.

WILLIAMS COLLEGE OF BUSINESS MISSION: "We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition."

COURSE OBJECTIVES

Chapter 1, "Introduction to Visual Basic 2008," introduces Microsoft's Visual Studio integrated development environment (IDE). The single environment is used for multiple programming languages. A stepby- step program gets students into programming very quickly (quicker than most books). The PrintForm control is included to allow students to easily submit screen captures of the form at run time. The chapter introduces the OOP concepts of objects, properties, methods, and events. The elements of debugging and using the Help system are also introduced.

Chapter 2, "User Interface Design," demonstrates techniques for good program design, including making the interface easy for users as well as guidelines for designing maintainable programs. Several controls are introduced, including text boxes, rich text boxes, masked text boxes, group boxes, check boxes, radio buttons, picture boxes, and the new Shape and Line controls.

Chapter 3, "Variables, Constants, and Calculations," presents the concepts of using data and declaring the data type. Students learn to follow standards to indicate the data type and scope of variables and constants and always to use Option Strict, which forces adherence to strong data typing. Error handling is accomplished using structured exception handling. The Try/Catch/Finally structure is introduced in this chapter along with calculations. The student learns to display error messages using the MessageBox

class and also learns about the OOP concept of overloaded constructors.

Chapter 4, “Decisions and Conditions,” introduces taking alternate actions based on conditions formed with the relational and logical operators. This chapter uses the If statement to validate input data. Multiple decisions are handled with both nested If statements and the Select Case structure. The debugging features of the IDE are covered, including a step-by-step exercise that covers stepping through program statements and checking intermediate values during execution.

Chapter 5, “Menus, Common Dialog Boxes, Sub Procedures, and Function Procedures,” covers the concepts of writing and calling general sub procedures and function procedures. Students learn to include both menus and context menus in projects, display the Windows common dialog boxes, and use the input provided by the user.

Chapter 6, “Multiform Projects,” adds splash forms and About forms to a project. Summary data are presented on a separate form. The Friend keyword is introduced.

Chapter 7, “Lists, Loops, and Printing,” incorporates list boxes and combo boxes into projects, providing the opportunity to discuss looping procedures and printing lists of information. Printing is accomplished in .NET using a graphics object and a callback event. The printing controls also include a Print Preview, which allows students and instructors to view output without actually printing it.

Chapter 8, “Arrays,” introduces arrays, which follow logically from the lists covered in Chapter 7. Students learn to use single- and multidimension arrays, table lookups, and arrays of structures.

Chapter 9, “Web Applications,” introduces Web applications using VB Web Forms. Students learn to design and develop simple Web applications that consist of Web pages that execute in a browser application. Multiple-page Web sites are covered along with validator controls and an introduction to state management.

Chapter 10, “Database Applications,” introduces ADO.NET, which is Microsoft’s latest technology for accessing data in a database. This chapter shows how to create binding sources, table adapters, and datasets. Programs include accessing data from both Windows Forms and Web Forms. Students learn to bind data tables to a data grid and bind individual data fields to controls such as labels and text boxes. LINQ is used to query system processes.

Chapter 11, “Data Files,” presents the VB object-oriented techniques for data file handling. Students learn to save and read small amounts of data using the My object and using streams. The StreamWriter and StreamReader objects are used to store and reload the contents of a combo box.

Chapter 12, “OOP: Creating Object-Oriented Programs,” explains more of the theory of object-oriented programming. Although we have been using OOP concepts since Chapter 1, in this chapter students learn the terminology and application of OOP. Inheritance is covered for visual objects (forms) and for extending existing classes. The samples are kept simple enough for an introductory class.

Chapter 13, “Graphics, Animation, Sound, and Drag-and- Drop,” covers the classes and methods of GDI+. The chapter covers graphics objects, pens, and brushes for drawing shapes and lines. Animation is accomplished using the Timer control and the SetBounds method for moving controls. My.Computer.Audio.Play is used to provide sound, and drag-and-drop events are used to transfer the contents of a text box to a list box and to move images.

Chapter 14, “Additional Topics in Visual Basic,” introduces some advanced VB topics. This final chapter covers validating user input using Error Providers and the Validating

event of controls. Students learn to create applications using multiple document interfaces (MDI), create toolbars and status bars using ToolStrip and StatusStrip controls, and add Web content to a Windows Form using the WebBrowser control. The code snippet feature is introduced. Reading and writing XML text files is covered using the new XML literals and using LINQ. An introduction to Windows Presentation Foundation (WPF) includes using WPF interoperability with a standard Windows Form and creating a WPF Form project.

MATERIALS REQUIRED

To create a portable copy of programs will require the use of a zip disk or USB drive. This will allow you to bring your work to class and/or my office for help with debugging.

CLASS TIME APPROACH

It is assumed that the student has read all assigned materials prior to classroom discussion. Assigned reading materials will be summarized in lectures using only a subset of available PowerPoint presentations, logic examples, and code demonstration.

The course uses a combination of lecture/demonstration and *active learning* applications. Classes will meet in the lab and where appropriate class time will be available for building assigned applications. Class lab opportunities will not be sufficient for completing course assignments. Therefore, students should expect to spend approximately 3 hours per week outside of class preparing lab assignments.

CLASS POLICIES

1. You are expected to attend each class meeting.
2. Late assignments cause problems for the student and the instructor. Students working on old assignments are not focusing on the new material being presented. As assignments are graded at one time, late assignments may not be scored consistently. Assignments will be accepted for full credit with a grace period of 1 day from the due date. After the grace period, a penalty of 2 points will be assessed for late assignments. Assignments turned in on time, but incomplete, should demonstrate an effort on the part of the student to accomplish the task and will receive no worse than a grade of 5. Failure to turn in an assignment results in a zero (0).
3. Students are expected to keep track of their own exam scores and class standing. You may want to use the computer for this application. The instructor will not provide this information prior to final exams.

ACADEMIC HONESTY

"All work submitted for academic evaluation must be the student's own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited as is the use of any work untruthfully submitted as one's own." The penalty for violation of this policy will be a zero for that assignment if it is a first offense. Subsequent violation will result in an ***F for the course*** and a letter to the Dean.

You are encouraged to work together on the logic of a program but you must do the actual programming yourself.

EVALUATION

Quizzes	13	260 points
Programs	26	260 points
Total		520 points

GRADING SCALE

A	540 – 468
B	467 – 432
C	431 – 378
D	377 – 324
F	323>

COURSE OUTLINE

(All assignments and test are found in Blackboard)

08/23/10	Syllabus Review/Software verification
08/30/10	Chapter 1
9/6/10	Labor Day – No Classes
9/13/10	Chapter 2
09/20/10	Chapter 3
09/27/10	Chapter 4
10/4/10	Chapter 5
10/11/10	Chapter 6
10/18/10	No Class
10/25/10	Chapter 7
11/1/10	Chapter 8
11/8/10	Chapter 9
11/15/10	Chapter 10
11/22/10	Chapter 11
11/29/10	Chapter 12
12/6/10	Chapter 13
12/13/10	Make Up Week/Final Exam Week

Class does not meet on these dates:

September 6 – Labor Day
October 18 - Conference