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Course Outline for CS 40

VBSCRIPT, ASP, ACTIVEX

Effective: Spring 2014

I. CATALOG DESCRIPTION:

CS 40 — VBSCRIPT, ASP, ACTIVEX — 2.00 units

Introductory coding of ActiveX Controls, VBScript and ASP capabilities in web applications designed to run primarily under Microsoft Internet Explorer. Demonstration and use of user interface ActiveX objects, the VBScript that allows these controls to operate and the use of ASP to access database data over the web. Designed as an introductory course for Microsoft Internet Explorer web page authors with a moderate background in programming to develop user controlled event driven applications with the potential capability to access data over the web.

1.50 Units Lecture 0.50 Units Lab

Prerequisite

CS 32 - Visual Basic Programming
with a minimum grade of C

Grading Methods:

Letter or P/NP

Discipline:

	<u>MIN</u>
Lecture Hours:	27.00
Lab Hours:	27.00
Total Hours:	54.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering the course a student should be able to:

A. CS32

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

- A. GENERIC: These outcomes are being developed throughout the entire programming sequence. Upon completion of the course, to an advanced level, students should be able to: Programming Languages
 1. Explain and apply the fundamental concepts of VBScripting and Active Server Pages (ASP)
 2. Present the elements and features of the development environment for ASP
 3. Explain and use the design process for ASP
 4. Define and use decision and repetition structures in VBScript
 5. Define and use user and built in functions in VBScript
 6. Use operators and functions in VBScript
 7. Define and explain trends in programming ASP standards
 8. Write, compile, test and debug ASP and Active X web pages
 9. Present the characteristics of object-oriented programming in Active X user interfaces
 10. Define and use data types and variables in VBScript
 11. Define and use arrays
 12. Define and use user interfaces in Active X and ASP web applications
 13. Define and use file I/O in Active X data binding controls
 14. Develop and use event-driven programs under Active X
 15. Embed Active X controls in an ASP web page
- B. Systems Design
 1. Specify major subsystems and interfaces using available Active X controls and HTML static form tags for ASP pages.
 2. Identify maintenance requirements
 3. Perform feasibility studies of design alternatives (i.e. Active X data binding controls vs. ASP connections to Access)
 4. Identify physical requirements for systems implementation
 5. Establish security requirements
- C. Technical Documentation
 1. Write in a concise and precise form appropriate for technical documentation
 2. Explain and use the processes and techniques of technical documentation

3. Record system specifications accurately and completely
- D. Testing and Debugging
 1. Select debugging and testing methodology, and develop comprehensive and systematic test plan
 2. Develop testing procedures
 3. Conduct tests in the most efficient way
 4. Test programs, and document errors and solutions
- E. User Interface Design
 1. Define the requirements for the user interface
 2. Detail the development process and methods best suited for the project
 3. Develop user interface (UI) to meet user requirements
 4. Test UIs
- F. Problem Solving
 1. Recognize a wide range of problems, and assess their impact on the system
 2. Use a wide range of troubleshooting methods and tools to isolate problems
 3. Select the appropriate approach to identify causes of the problem based on the given situation
- G. SPECIFIC: These outcomes are detailed specifically for this course. Upon completion of the course students should be able to:
 - Discuss ActiveX controls, VBScript and ASP capabilities on the world wide web.
- H. Write programs using the syntax and grammar of VBScript.
 - I. Write programs that create and control objects and events under VBScript.
 - J. Write programs using HTML form tags with VBScript.
 - K. Write programs that use Microsoft's Active X Control Pad.
 - L. Create Active X GUI objects.
 - M. Activate and implement multimedia capabilities using the Microsoft Multimedia Player control
 - N. Discuss setting up an ASP server and security considerations
 - O. Use the basic grammar and syntax of Active Server Page coding.
 - P. Use ASP components.

V. CONTENT:

- A. Overview of ActiveX controls, VBScript and ASP capabilities on the world wide web
- B. Syntax and grammar of VBScript
 1. variables
 2. arithmetic operations
 3. functions and passing arguments
 4. looping
 5. if...then...else
 6. case structures
 7. numerical formatting
 8. string processing
 9. arrays
- C. Creating and controlling objects and events under VBScript
 1. window properties
 2. frames
 3. buttons
 4. popup dialog boxes
- D. Using HTML form tags with VBScript
 1. buttons
 2. checkboxes
 3. radioboxes
 4. password
 5. text
- E. Use of Microsoft's Active X Control Pad
- F. Creation of Active X GUI objects
 1. command buttons
 2. text fields
 3. pull down combination boxes
 4. labels
 5. image
 6. popup menu
 7. timers
 8. spin and radio buttons
 9. tab controls
 10. calendar control
 11. horizontal and vertical scroll bars
 12. URL linking and data binding
- G. Activating and implementing multimedia capabilities using the Microsoft Multimedia Player control
 1. sound formats
 2. static graphic images
 3. movie clips
- H. Overview of setting up an ASP server and security considerations
 - I. Basic grammar and syntax of Active Server Page coding
 - J. ASP components

VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Demonstration** -
- C. **Projects** - Optional: Programming project completed in teams
- D. **Lab** - Lab Programming Assignments
- E. **Discussion** -

VII. TYPICAL ASSIGNMENTS:

A. Cyber Restaurant 1. Using Active X controls allow a user to select one to five a'la carte menu categories (Main Dish, Side Order 1, Side Order 2, Desert and a Drink. Under each category have at least 4 individual choices (i.e. Main Dish: Sirloin Steak, Lobster and Prawns, Beef Stew, Spaghetti with Meat Balls). Compute the menu total, sales tax and leave a 15% tip. Each Category should contain a "NONE" option if you do not wish to order that category. 2. You web page should contain: a. 5 comboboxes (one per menu category – include the price per item in the item text b. 2 labels (one to display the items and their individual prices PLUS another label to hold the total, sales tax, tip and grand total) c. 2 Buttons (one to calculate PLUS another button to clear the labels and reset the numeric variable totals to zero) 3. The following Active X

controls are needed:

VIII. EVALUATION:

A. **Methods**

B. **Frequency**

1. Frequency of evaluation
 - a. Recommend 2 or 3 exams plus final examination
 - b. Recommend programming assignment to cover each topic within course content. Contents can be combined.
2. Types of Exam Questions
 - a. Write a method `smallerOf()` that returns the smaller of two given integer values.
 - b. Using a conditional expression, construct a method `sum()` that returns the value according to Gauss's formula if the value of its parameter is positive, and zero otherwise. In algebraic form, Gauss's formula is: $sum = (n(n+1))/2$
 - c. Write a case structure and a call to a VBScript function to maintain a "running" subtotal for data values located in file "Scores.dat".

IX. TYPICAL TEXTS:

1. Paul Thurrott *VBScript for the World Wide Web.*, PeachPit Press, 1997.
2. Francis, Kauffman, Llibrem Sussman and Ullman *Beginning Active Server Pages 2.0.*, Wrox Press, 1999.
3. Deitel, Deitel and Nietro *Internet and the World Wide Web How to Program.*, Prentice Hall, 2000.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Software Download Microsoft's ActiveX Control Pad for the ActiveX Control programming in an HTML web page. Microsoft IIS (Internet Information Server) and Windows NT setup on a computer lab student server. This class is based upon having the Microsoft Windows NT operating system available on the lab's stations and an available ASP server.
- B. Equipment Institution server installed with ASP (preferably an NT 4.0 operating system with Server Pack 3.0 or higher) running Microsoft IIS (Internet Information Server) software. Institution lab computer stations accessing the world wide web with the latest version of Microsoft Internet Explorer.