**Course Outline for CIS 59C**

**WEB PROGRAMMING - JAVASCRIPT /AJAX**

**Effective: Fall 2010**

I. CATALOG DESCRIPTION:
   CIS 59C — WEB PROGRAMMING - JAVASCRIPT /AJAX — 4.00 units

   Develop client-side, interactive webpages using JavaScript and asynchronous JavaScript and XML (AJAX) scripting
   languages. Write JavaScript scripts that manipulate with the JavaScript Document Object Model (DOM), control program
   flow, validate forms, animate images, target frames, and create cookies. Implement AJAX techniques that uses
   JavaScript-based objects to retrieve responses from a web server in a dynamic way, allowing for instant, on page updating,
   a key element in Web 2.0.

   3.00 Units Lecture 1.00 Units Lab

   **Strongly Recommended**
   CIS 50 - Intro to Computing Info Tech


   **Grading Methods:**
   Letter or P/NP

   **Discipline:**

   |  | **MIN** |
   | --- | --- |
   | **Lecture Hours:** | 54.00 |
   | **Lab Hours:** | 54.00 |
   | **Total Hours:** | 108.00 |


II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2

III. PREREQUISITE AND/OR ADVISORY SKILLS:

   **Before entering this course, it is strongly recommended that the student should be able to:**

   A. CIS50

IV. MEASURABLE OBJECTIVES:
   **Upon completion of this course, the student should be able to:**
   A. Explain and apply JavaScript and Ajax syntax and rudiments of programming logic
   B. Develop proficiency in client-side web programming using HTML/DHTML/XHTML/XML, JavaScript, Ajax
   C. Incorporate interactive JavaScript and Ajax elements into web pages
   D. Develop good structured programming techniques
   E. Explain and implement document object model, event handlers, variables and functions, browser detection, forms validation, text and
      image rollovers
   F. Design and implement of a wide range of JavaScript and Ajax functions and procedures
   G. Produce functional and user-friendly JavaScript and Ajax commands to control web page windows and information

V. CONTENT:
   A. Use DHTML/HTML/XHTML/XML tags to create a Web page
   B. Create a Web page using a text editor
   C. Identify the differences between client-side scripts and server-side scripts
   D. Learn about the Document Object Model and the Document Object Model hierarchy
   E. Write JavaScript and Ajax programs that include the following:
      1. variables (numeric and string) and how to declare and name them and data types
      2. create scripts that use arithmetic, comparison, and logical operators
      3. simple loops: Use Do While, While Do, and For Next looping control structures to repeat blocks of code
      4. create conditional and nested expressions: IF/THEN/ELSE
      5. arrays - create and declare arrays
      6. use built-in functions in JavaScript
      7. create functions and procedures in JavaScript/Ajax
      8. call functions and procedures in JavaScript/Ajax
   F. Scripts
      1. Writing, testing, debugging
      2. Using a Hyperlink to send data

3. Sending data using an online form
G. Processing form data
    1. Variables and assignment statements
    2. Data validation in forms
H. Ajax
    1. Define AJAX, how it works, differentiate an AJAX application from a conventional JavaScript web application
    2. Improve usability of existing web pages by combining AJAX techniques and page elements with static elements
    3. Send and receive data from the application server without interrupting the user's workflow by refreshing the page

## VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Discussion** -
C. Overhead projector foils to introduce concepts
D. Videos; reading assignments; tutorials
E. Hands-on explanation utilizing personal computers
F. Laboratory experience: hands-on lab projects
G. Computer demonstrations with overhead display panel

## VII. TYPICAL ASSIGNMENTS:
A. Project 3, Case 1: Your uncle has a used car lot. He has hired you to develop his new Web page. He wants to display pictures of the cars he has in stock, but he does not want customers to have to wait for 30 to 50 pictures to load. You tell him the easiest way to solve the problem is to use a drop-down list that shows the current models and when the user selects a particular model a picture displays along with the car's specifications. B. Project 4 Case 1: Your friend owns a local computer store. His web page has become very popular and several local merchants have purchased advertising on the page. He wants visitors to see different advertisements on each visit to the page. Each ad is a graphic image. You need to use cookies to keep track of the last ad that the view say and then show the next ad next visit. When the last ad has been seen, the cycle begins again with the first ad.

## VIII. EVALUATION:
A. **Methods**
    1. Exams/Tests
    2. Quizzes
    3. Class Participation
    4. Lab Activities
    5. Other:
        a. Methods:
            1. Programming assignments using JavaScript/Ajax
            2. Quizzes, examinations (mid-term, final)
            3. Computer lab assignments and projects
            4. Participation
B. **Frequency**
    1. Frequency
        a. Two to three quizzes and a final examination
        b. Weekly lab assignments to reinforce and demonstrate programming skills

## IX. TYPICAL TEXTS:
    1. Carey/Canovatchel *New Perspectives on JavaScript and AJAX, Comprehensive.* 2nd ed., Course Technology, 2010.
    2. Deitel *JavaScript Fundamentals I and II LiveLessons Bundle.*, Prentice Hall, 2010.
    3. Barksdale, Karl and E. Shane Turner *HTML and JavaScript Basics.* 4th ed., Course Technology, 2010.

## X. OTHER MATERIALS REQUIRED OF STUDENTS:
A. GoPrint Card