NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
ITP 140 – CLIENT SIDE SCRIPTING (4 CR.)

Course Description

Provides instruction in fundamentals of Internet application design, development, and deployment using client side scripting language(s). Lecture 4 hours per week.

General Course Purpose

Introduces students to front-end web scripting use JavaScript and JQuery.   The course explains how JavaScript can be used in browsers to make websites more interactive, interesting, and user-friendly. Students will also learn about JQuery (or another JavaScript library).

Course Prerequisites/Corequisites

None.

Course Objectives

Upon completing the course, the student will be able to:

a) Knowledgeable in current front-end web development scripting technologies
b) Proficient in use JavaScript and JQuery or another comparable JavaScript library
c) Able to discuss, recognize, and apply the elements of good scripting in a front-end web development environment

Major Topics to be Included

- Overview of Programming
- Basic JavaScript
- Functions, Methods & Objects
- Decisions and Loops
- The Browser DOM: Document Object Model
- Events
- JQuery
- Ajax and JSON [optional, if time permits]
- APIs [optional, if time permits]
- Error Handling and Debugging [optional, if time permits]
- Content Panels
- Filtering, Searching and Sorting
- Form Enhancement and Validation

Details of Major Topics

- Overview of Programming
- Basic JavaScript
    - Use a Variable to Store a String
    - Use Quotes Inside a String
    - Use a Variable to Store a Boolean
    - Use shorthand for Create Variables
    - Change the Value of a Variable
    - Create an Array

- o Create a coding statement to Create & Change the Values in an Array
- o Use Arithmetic Operators
- o Use String Operators
- Functions, Methods & Objects
  - o Create a basic function
  - o Create Objects Use Literal Notation
  - o Create Objects Use Constructor Syntax
  - o Create & Access Objects Constructor Notation
  - o Add and Remove Properties
  - o Use the Browser Object Model [DOM]
  - o Use the Document Object
  - o Create code that includes a Strings
  - o Create code that includes Decimal Numbers
  - o Use a Math Object to Create Random Numbers
  - o Create a Date Object
  - o Create code that includes Dates & Times
- Decisions and Loops
  - o Use Comparison Operators
  - o Write coding statements that compare Two Expressions
  - o Use Logical And
  - o Use Logical Or & Logical Not
  - o Use If Statements
  - o Create code that includes an If Statement with a Function
  - o Use If...Else Statements
  - o Use Switch Statements
  - o Use For Loops
  - o Use While Loops
  - o Use Do While Loops
- Create code that uses The Browser DOM: Document Object Model
  - o Select Elements Use ID Attributes
  - o Select Elements Use Class Attributes
  - o Select Elements by Tag Name
  - o Select Elements Use CSS Selectors
  - o Create code that Loops Through a NodeList
  - o Create code that uses Previous & Next Sibling
  - o First & Last Child
  - o Accessing & Changing a Text Node
  - o Accessing Text Only
  - o Update Text & Markup
  - o Adding an Element to the DOM Tree
  - o Removing an Element from the DOM Tree
  - o Check for an Attribute and Get Its Values
  - o Create Attributes & Changing Their Values
  - o Removing Attributes
- Create Events that perform the following
  - o Use DOM Event Handlers
  - o Use Event Listeners
  - o Use Parameters with Event Listeners
  - o Use Event Listeners with the Event Object
  - o Use Event Delegation
  - o Load
  - o Focus & Blur
  - o Click
  - o Determining Position
  - o Which Key Was Pressed
  - o Use Form Events
  - o Use Mutation Events
  - o Use HTML5 Events
- Create JQuery commands that perform the following:

- Including the jQuery Script in Your Page
- A Basic jQuery Example
- Looping
- Chaining
- Getting at Content
  - HTML Fragment
  - Text Fragment
  - HTML Node
  - Text Node
- Changing Content
- Adding New Content
- Working with Attributes
- Changing CSS Rules
- Use .each()
- Events
- Event Object
- Delegating Events
- Basic Effects
- Use Animation
- Traversing
- Filters in Use
- Use Index Numbers
- Working with Forms
- Cut, Copy, Paste
- Changing Dimensions
- Determining Position of Items on the Page

- Create Content Panels that include:
  - Accordion
  - Tab Panels
  - Modals
  - Photo Viewer
  - Slider
  - JQuery accordion plugin
- Create statements that include Filtering, Searching and Sorting
  - Static Filtering of Data Use forEach()
  - Static Filtering of Data Use filter()
  - Dynamically Filtering an Array
  - Tagged Images
  - Searchable Images
  - Sorting a Table
- Create a Form that includes Enhancement and Validation
  - The Submit Event & Getting Form Values
  - Showing a Password
  - Disable Submit Button
  - Select All Checkboxes
  - Radio Buttons
  - Select Boxes
  - Character Counter
  - Placeholder Polyfill
  - Conditional Loading of a Polyfill
  - Form HTML

- Optional Topics:

  - Ajax and JSON [optional]
  - APIs [optional]
  - Error Handling and Debugging [optional]

In order to standardize the core topics of this course, so that a course taught at one campus is equivalent to the same course taught at another campus, the following student contact hours per topic are required. The topics do not need to be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. There are normally 45 student-contact-hours per semester for a three credit course. (This includes 15 weeks of instruction and does not include the final exam week so 15* 3 = 45 hours. Sections of the course that are given in alternative formats from the standard 16 week section still meet for the same number of contact hours.) The final exam time is not included in the time table. The last category, Other Optional Content, leaves time for an instructor to tailor the course to special needs or resources.

TOPIC	HOURS	PERCENT
Overview of Programming	1	4
Basic JavaScript	5	11
Functions, Methods & Objects	5	11
Decisions and Loops	5	11
The Browser DOM: Document Object Model	5	11
Events	5	11
JQuery	9	20
Content Panels	1	2
Filtering, Searching, and Sorting	2	4
Form Enhancement & Validation	2	4
Optional Content	5	11
TOTAL	**45**	**100**