

Course Syllabus

Course Number: GWDA223

Course Title: Intermediate Web-based Scripting

Class Meetings:	Section A, Thursday, 7:30-11:30pm, Rm. 113, 2900 MAIN Bldg. The quarter begins on Monday, 1/13/2014 and ends on Saturday, 03/29/2014.
Session/Year:	Wi14
Instructor Name:	Dr. Pete Markiewicz
Email Address:	pindiespace@gmail.com
Phone:	Comeon, it's the 21st century, dude
Class website:	http://www.plyojump.com/courses
Office Hours:	Tuesday, 12:00-4:00pm, Rm. 321, 2950 Bldg. (the Tutoring Center, near the Library and Registrar)
Contact me at:	pmarkiewicz@aii.edu
Facebook, LinkedIn	Username: "pindiespace"
MySpace	Username: "Beef Tallowe"
Second Life	Students may also access "virtual office hours" during the same time as regular office hours by meeting the Instructor in the Second Life 3D virtual world (download client at http://www.secondlife.com) during Office Hours. Search for avatar "pindiespace potato"

Intermediate Web-based Programming

Course Description: An introduction to the JavaScript programming language. Students will learn the basic principles underlying JavaScript and similar "structured" programming languages.

Course Focus: *This class will introduce and explore the features and capability of JavaScript as a programming language for adding dynamic behaviors to web pages. Focus will be on features including structured programming and object-oriented programming, DOM (Document Object Model) and Ajax, with application to similar programming languages (e.g. Actionscript). Practical methods will be introduced showing how to write, modify, and debug JavaScript programs.*

Course Competencies:

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

- Understand the theory behind programming languages versus markup
- Understand the difference between client-side, server-side, server-parsed language
- Understand the differences between procedural and object-oriented programming
- Identify basic data structures (arrays, variables, data types, expressions)
- Understand DOM object structure of JavaScript in web pages
- Identify the standard set of JavaScript commands and operators
- Understand JavaScript functions and parameter-passing
- Understand event handling within JavaScript
- Acquire and incorporate public JavaScript source code it into programs
- Create a working, original JavaScript program
- Create and modify dynamic web assets.

Course Focus Competencies:

- Learn fundamental features common to all programming languages

- Understand ‘modern’ techniques of JavaScript programming, including “closure”
- Learn to use JavaScript Libraries like JQuery and Modernizr

Course Prerequisite: MM2203 Introduction to Web Design

Course Length:	11 Weeks
Contact Hours:	44 Hours
Lecture:	22 Hours per week
Lab:	22 Hours per week
Credit Values:	3 Credits

Quarter Credit Hour Definition:

A quarter credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for 10-12 weeks, or the equivalent amount of work over a different amount of time; or
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practical, studio work, and other academic work leading to the award of credit hours.

Method of Instruction:

This course will include (1) lectures on topics in the required textbook and selected documents on the Internet, (2) labwork allowing students to apply concepts introduced during lectures, and (3) homework assignments which allow students to practice programming techniques introduced in class. Homework also includes extra-credit options allowing students to go beyond the required programming techniques introduced in class. Homework from the previous week is presented in-class prior to the beginning of the lecture with basic and extra-credit options.

Students receive a weekly grade for their coursework consisting of (1) completed homework, (2) completed in-class assignments, and (3) credit for class participation, in particular researching or answering questions posed by the Instructor during the lecture.

Text(s):

TEXT #1 : (REQUIRED) *DOM Scripting: Web Design with JavaScript and the Document Object Model*, by Jeremy Keith with Jeffrey Sambells, 2nd Edition, Friends of ED, Sept, 2010, ISBN: 978-1-4302-3389-3

TEXT #2: (OPTIONAL) *JavaScript Cookbook*, by Shelley Powers, O’Reilly, ISBN: ISBN-10: 0596806132, ISBN-13: 978-0596806132.

TEXT #3: (OPTIONAL) *JavaScript: The Good Parts*, by Douglas Crockford, O’Reilly/Yahoo! Press, ISBN: 978-0-596-51774-8.

TEXT #4: (OPTIONAL) *Professional JavaScript for Web Developers*, Nicholas C. Zakas, WROX/Wiley, ISBN: 978-1-118-02669-4

Additional:

Code Academy JavaScript Tutorial – <http://www.codecademy.org>

Materials and Supplies: Backup media (CD-ROMs or thumbdrives)

Estimated Homework Hours: # 4 Hours per week

Technology Needed: Student and/or ISP accounts allowing upload of websites.

Grading Scale:

All assignments must have clear criteria and objectives to meet. All students shall be treated equitably. It will be that student's right to know his/her grade at any reasonable point that information is requested by that student. The criteria for determining a student's grade shall be as follows (on a percentage of total points basis):

A	100-93
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-77
C	76-73
C-	72-70
D+	69-67
D	66-65
F	64 or below

Process for Evaluation:

Attendance and Participation	10%
Assignments and Exercises	50%
Mid-Term Project/Examination	15%
Final Project/Examination	25%

***PLEASE NOTE: SHOWING UP TO CLASS AND DOING ALL ASSIGNMENTS, WITHOUT PROGRESS, DOES NOT CONSTITUTE A PASSING GRADE.**

Student Evaluation/Grading Policies:

- Class time will be spent in a productive manner.
- Grading will be done on a point system.
- Points for individual activities will be announced.
- All work must be received by the set deadlines.
- Late work receives a grade of zero.
- On-time projects may be redone with instructor approval.
- ABSOLUTELY NO WORK WILL BE ACCEPTED AFTER THE FINAL CLASS MEETS WEEK 11.

School-wide Attendance Policy:

Students who do not attend any classes for fourteen (14) consecutive calendar days and fail to notify the Academic Affairs Department will be withdrawn from school. In addition, the student may be involuntarily withdrawn at the discretion of the Academic Director, and with the approval of the Dean of Academic Affairs, at any time.

WDIM Attendance Policy:

Students arriving late or leaving early will be charged in 15-minute increments of absenteeism.

3x late or leave early = 1 absence

3 absences = fail

Policy for this Instructor:

1. If you don't understand, come to office hours...

2. **Office hours are not a second lecture** – they are designed to give you additional help for problems you didn't understand in class.
3. **You are completely responsible** for your own performance in class.
4. **Students will complete all work** in the syllabus. If there is a school holiday, you are still expected to complete assignments for that week.

Scholastic Dishonesty:

Scholastic dishonesty, including but not limited to cheating, plagiarism, or knowingly supplying false information or deceiving the school and its officials, is a violation of the student conduct policy. Any student who is found to have violated this policy is subject to disciplinary sanctions up to and including suspension or permanent dismissal. Please be aware that plagiarism is presenting another's ideas as one's own and includes paraphrasing as well as copying without proper citations or quotation marks. Please refer to page 147 in the Student Handbook for more information.

Disability Policy Statement:

"It is our policy not to discriminate against qualified students with documented disabilities in our educational programs, activities, or services. If you have a disability-related need for adjustments or other accommodations in this class, contact LaToya Williams, Student Support and Disability Services Coordinator by phone (310-314-6112) or by email (lrwilliams@aii.edu)."

Course Outline

Monday, Jan 20th, and Friday, Feb 21st are Campus Holidays. No classes are scheduled.

Week/Day	Topics
	Intro to JavaScript
1	<p>LECTURE: Syllabus review. History of web-based programming languages. History and standards for JavaScript. Overview of structure (HTML & HTML5), presentation (CSS), and behavior (JavaScript) interactions. JavaScript and dynamic sites. JavaScript and Ajax. JavaScript and HTML 5. JavaScript and ActionScript.</p> <p>LAB: Create a basic website with standards-based HTML, CSS, and JavaScript. Create a simple JavaScript program in a 2-column layout. Chapter 1, "DOM Scripting" textbook. Explore online JavaScript consoles (jsFiddle, JS Bin, Firebug) and internal console objects in major browsers. Create a "Pet Dork" program.</p> <p>HOMEWORK: Work Through W3School exercises, Read Chap. 1 & 2, "DOM Scripting" text.</p>
	Sandbox: Features of the JavaScript language
	<p>LECTURE: Review Week 1 assignment. Formatting Code. Boilerplates. The Console object. Variables and constants. Numbers. Strings. Arrays. Operators. New Operator. Objects. Conditional/branch statements. Looping. Events and event handlers. Principles of structured programming. DOM Manipulation. Chapter 1, 2 "DOM Scripting".</p> <p>LAB: Create a Mini-Modernizr or a "Pixelator" program in a 3-column layout using variable assignment, branch statements, and looping. Create a "function tree" for animated walk cycle.</p> <p>HOMEWORK: Work through Chapter 3, "The Document Object Model" in "DOM Scripting".</p>
	Functions, Arrays, Objects, Debugging, Patterns
3	<p>LECTURE: Use of functions to subdivide programs. Using arrays to store data. More on Objects. Basic DOM Manipulation, Chap. 3 "DOM Scripting" and lecture notes.</p> <p>LAB:</p>

Walk-through of Chapter 3, “The Document Object Model” in “DOM Scripting. Basic form validation (online tutorial).

HOMEWORK:

Work through Chapter 4, “Image Gallery” in “DOM Scripting”

Intro to the JavaScript DOM

LECTURE:

Review of JavaScript thus far – writing a useful JavaScript application. Enhance the JavaScript image gallery with objects. (Lecture Notes). Methods of creating objects. Properties. The “this” operator.

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LAB:

Work with Objects. Create an ‘enhanced’ image gallery from Chap. 4, “DOM Scripting”

HOMEWORK:

Prepare for Midterm Test.

MIDTERM TEST

LAB:

Work on midterm (will take the entire class).

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HOMEWORK:

Do assigned JavaScript tutorials.

OOP Programming and Best Practices

LECTURE:

Midterm review. Code formatting review. Unobtrusive Javascript. Calling scripts using the DOM and XSS. JavaScripts objects in detail (literal, by function, new operator).

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LAB:

Functions, Object Literals. Returning an Object via a function with closure. Loading external scripts using DOM and XSS methods. Best practices. Image Gallery revisited, Chap. 6, “DOM Scripting”. HTML5 Games – first development tutorial.

HOMEWORK:

Chapter 7, 8 plus assigned JavaScript tutorials.

JavaScript & CSS DOM, Part II, Design Patterns and MVC

LECTURE:

Creating markup on the fly. Feature Detection and Progressive Enhancement.

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LAB:

Best Practices (Chapter 5, “DOM Scripting” textbook). JavaScript Feature Detection and Progressive Enhancement. Re-writing the Image Gallery with modern techniques. Factory functions. The Module design pattern. Deugging redux. Possibilities for your final project.

HOMEWORK:

Chapter 9, plus assigned JavaScript tutorials.

Games and Ajax

LECTURE:

CSS DOM (Chap. 9, “DOM Scripting”) HTML5 Animation FINAL PROJECT DESCRIPTION.

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LAB:

Work through game tutorials in class. Ajax Tutorial

HOMEWORK:

Complete specified JQuery tutorials, defined by the Instructor. Begin work on final project. Work through Chapter 11, “HTML5”, Ajax Tutorials, HTML5 “Drag and Drop”

HTML5 JavaScript APIs JavaScript Ui Libraries

LECTURE:

Geolocation with Google Maps API. Ui Elements created with JavaScript. JavaScript Libraries (JQuery and others). Ajax in JQuery. HTML5 Canvas Tag, Audio, Video, WebGL, WebWorkers.

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LAB: Geolocation exercise. Intro to JavaScript libraries (JQuery, Modernizr). JQuery plus Modernizr Tutorial. Documentation.

HOMEWORK:

Complete specified JQuery tutorials. Work on final Project.

Creating a mobile app with HTML, CSS, and JavaScript

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LECTURE:

Linking libraries and polyfills. Mobile app development. Javascript and Phonegap burns to native iOS and Java code.

LAB:

Choose one advanced tutorial, complete in class. Work on final project.

HOMEWORK:

Complete final project (feel free to add HTML 5 components, IF you provide for “Progressive Enhancement”)

FINAL PROJECT PRESENTATION

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Lecture: None

Students present final project.
