Florida Atlantic University
Dept. of Computer & Electrical Engineering and Computer Science
EGN 1935: Discoveries in Engineering: New-generation Web Technologies
Summer 2018

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Class Dates and Time:	June 11 – June 29, 2018 (M/W/F): 9:30 AM – 4:30 PM		
Location:	TBD		

Course Description and Prerequisites

Description: Hands-on introduction to some of the latest Web development tools, languages and models. Students will develop projects consisting of innovative Web-based solutions. Topics include: characteristics and foundations of Rich Internet Applications (RIAs), client-side technologies and languages, usability and human factors, and content sharing tools and technologies.

Prerequisites: Honors students 10th grade or higher

Course Objectives
(what we will do in this class)
- Provide a solid conceptual understanding of the main technologies associated with the Web, particularly what became known as *Web 2.0,* and current HMTL5

- Obtain hands-on Web design and programming experience by developing Web-based projects using the latest tools, languages, techniques, and best practices

- Examine the social and technical aspects of contemporary Web-based solutions such as: social networking, (micro) blogging, twitter and mobile web-based applications (time permitting)

Course Outcomes
(what we expect you to learn)
1. Learn about the latest tools, technologies, standards, and best practices in Web design and development
2. Understand the main principles behind the design of successful contemporary Web solutions
3. Acquire hands-on experience in designing Rich Internet Applications (RIAs) using the latest languages, tools, technologies, standards, and best practices
4. Understand the implications of social and human factors in the technical design of Web-based solutions and Rich Internet Applications (RIAs)

Course Structure
The class will meet for a 3-hr session in the morning followed by 1-hr lunch break and another 3-hr session in the afternoon.

Textbook (recommended, **not required**)
Internet and World Wide Web How To Program (5th Edition). Prentice Hall; November 19, 2011
ISBN-13: 978-0132151009
Code examples can be downloaded from http://www.pearsonhighered.com/deitel/
https://media.pearsoncmg.com/bc/abp/cs-resources/products/product.html#product,isbn=0132151006

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Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5 (Learning Php, Mysql, Javascript, Css & Html5) 4th Edition, Robin Nixon , 2014

Lecture notes
Lecture notes and handouts will be posted on Canvas (canvas.fau.edu)

Evaluation Methods

The course grade is based on the following components:

Project 1 – A Planned UI Layout Using Balsamiq	10%
Project 2 – Implementation of the UI Using the Bootstrap Framework	25%
Project 3 – Connection to the Database via PHP	25%
Final Project – An image microblogging app using HTML5, CSS, mySQL, and PHP (deliverables, presentation, and report)	30%
Participation	10%

Notes:
- All projects will be developed in groups of 3-4 students

Grading Scale: A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: < 60

Dates	Lecture Topics, Projects, and Assignments (Tentative | Subject to Change)
Day 1 **Mon** **6/11**	Welcome and Orientation; Course Administration and Policies; Schedule **MODULE 1: *The World Wide Web – Past, Present and Future*** Introduction and overview; History of the Web, Basic process, The network basics, How the Web works, File structure, Web authoring & publishing **MODULE 2: *UI Mockup using Balsamiq*** **MODULE 3: *Basic Web Design – The client side*** HTML5;
Day 2 **Wed** **6/13**	**MODULE 3: *Basic Web Design – The client side (cont'd)*** CSS; W3C validation, separation between presentation and content; templates; good and bad design **Project 1: *A Planned UI Layout Using Balsamiq*** Students will design the layout and user interface (UI) of the main pages of your website. You will use the program Balsamiq to mock up each page

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Day 3 **Fri** **6/15**	<u>**MODULE 4:**</u> ***Framwork – Twitter Bootstrap framework*** Tutorial on using Twitter Bootstrap framework **Project 1 due** <u>**Project 2:**</u> ***– Implementation of the UI Using the Bootstrap Framework*** Implement the UI you created in the previous assignment using HTML, CSS, and the Twitter Bootstrap framework.
Day 4 **Mon** **6/18**	<u>**MODULE 5:**</u> ***JavaScript*** Control statements, functions, arrays, object
Day 5 **Wed** **6/20**	<u>**MODULE 6:**</u> ***DOM and JQuery*** Document Object Model (DOM): Objects and Collections, JQuery **Project 2 due: halfway demonstration**
Day 6 **Fri** **6/22**	<u>**MODULE 7: MySQL and PHP**</u> Relational databases, examples of database query, connect to database server, PHP overview **Project 3:** Connect to database via PHP Add the first bit of functionality to your website by setting up your mySQL database and connecting to it through your site using PHP. The PHP code should insert a new user into the database by way of the registration page you created.
Day 7 **Mon** **6/25**	<u>**MODULE 7: MySQL and PHP (continued)**</u> **Project 3: due** <u>**Final Project**</u>: Final Project – An image microblogging app using HTML5, CSS, mySQL, and PHP Students will finish working on their final project.
Day 8 **Wed** **6/27**	<u>**MODULE 8: Latest developments in HTML 5**</u> Highlights of HTML5 **Student evaluation**
Day 9 **Fri** **6/29**	<u>**MODULE 9: Review, Discussions, Reflection / Meta-cognition**</u> **Final Project due** ***Presentation of Final Projects*** ***Group photos***