



# SWE 363: WEB ENGINEERING & DEVELOPMENT

Spring Semester 2015 (2014-2)

**Getting Started**

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# Course Objective & Learning Outcomes

- *Course Objective:* Provide students with conceptual and practical knowledge, and skills required to develop web applications and web services
  
- *Upon completion of the course, you should be able to:*
  - ❑ Identify candidate tools and technologies for developing web applications.
  - ❑ Develop user-interfaces for web applications.
  - ❑ Describe and transform data using XML and its related technologies.
  - ❑ Develop web applications and web services.
  - ❑ Perform analysis modeling and design modeling for web applications.

# Grading Policy

- Quizzes & programming assignments (hosted on the web): 20%
- Project (Presentation and live demo): 10%
- Major Exam 1: 20% (Tentative Date: week 6)
- Major Exam 2: 20% (Tentative Date: week 11)
- Final Exam: 30%
- Lecture attendance: -1% for every unexcused absence

# Course Resources

## ■ *Required Material*

- ❑ Lecture notes and pointed web resources
- ❑ Internet and World Wide Web How to Program, 5/e, H. M. Deitel, P. J. Deitel, Prentice Hall 2012.

## ■ *Recommended References*

- ❑ XML How to Program, 1/e, H. M. Deitel, et al., Pearson Education Inc., 2001.
- ❑ Web Engineering - The Discipline of Systematic Development of Web Applications, G. Kappel, B. Pröll, S. Reich, and W. Retschitzegger (eds), John Wiley & Sons, 2006.
- ❑ R. Pressman, Web Engineering: A Practitioner's Approach, McGraw-Hill Higher Education, 2008. <http://highered.mcgraw-hill.com/sites/0073523291/>

# Tentative Topics

- The course consists of about 26 lectures (13 weeks, 2 lectures per week)
  - Internet, Web & HTTP (3 lectures)
  - HTML & CSS (4 lectures)
  - Page Layout and Responsive Design (2 lectures)
  - JavaScript: Functions & Objects (2 lectures)
  - JavaScript: DOM & Events (2 lectures)
  - AJAX, Web APIs, jQuery (6 lectures)
  - Client-side MVC & SPAs (3 lectures)
  - ASP.NET MVC Server-Side Programming (4 lectures)

# Caveat

- What this course is not about

“... there is a difference between training and education. If computer science is a fundamental discipline, then university education in this field should emphasize enduring fundamental principles rather than transient current technology.”

-Peter Wegner, Three Computing Cultures. 1970.

# Similar (and Useful) Courses

- University of Washington - CSE 154: Web Programming,  
<http://www.cs.washington.edu/education/courses/cse154/14au/>
- Wellesley College - CS110: Computer Science & the Internet,  
<http://cs110.wellesley.edu/~cs110/>
- Stanford University - CS 142: Web Applications,  
<http://web.stanford.edu/~ouster/cgi-bin/cs142-spring13/index.php>

# Recommended Books

## ■ HTML/CSS

- ❑ Connolly and Hoar, Fundamentals of Web Development, Pearson (2014).
- ❑ Jennifer Robbins, Learning Web Design – 4th edition, O'Reilly (2012).
- ❑ Ben Henick, HTML & CSS: The Good Parts, O'Reilly (2010).

## ■ JavaScript/Ajax

- ❑ Modern JavaScript: Develop and Design, Pearson (2012).
- ❑ Learning JavaScript – 2<sup>nd</sup> edition, O'Reilly (2008).
- ❑ [Eloquent JavaScript](#)
- ❑ [JavaScript Enlightenment](#)
- ❑ [DOM Enlightenment - Live Examples on JSFIDDLE](#)

## ■ Books on ASP.NET Web Pages using WebMatrix

- ❑ Mike Pope, Introducing ASP.Net Web Pages 2, Microsoft (2012)
- ❑ Brind & Spaanjaars, Beginning ASP.NET Web Pages with WebMatrix, Wrox (2011).



# Programming Tools & Resources

- For server-side web development, we will be developing **ASP.NET Web Pages** applications using **C#** programming language
  - ❑ You can use the latest full VS if you want; However, it is huge and overkill; **A better option is to use *Microsoft WebMatrix*.**
  - ❑ Also, you need to get an ASP.NET hosting account (e.g., **www.somee.com**)
- JavaScript Online Editors (with free workspace hosting):  
<http://www.sitepoint.com/7-code-playgrounds/>
  - ❑ JsFiddle: <http://jsfiddle.net/>
  - ❑ CodePen: <http://codepen.com/>
  - ❑ Liveweave: <http://liveweave.com/>
  - ❑ JsBin: <http://jsbin.com/>
- Resources & links on the course web page,  
<http://faculty.kfupm.edu.sa/ics/darwish/SWE363-Spring2015/>