

**Course Outline**

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Computing Science Department  
Faculty of Science

**COMP 2680**  
**Web Site Design and Development**

<b>Instructor:</b>	<b>Phone/Voice Mail:</b>
<b>Office:</b>	<b>E-Mail:</b>

**Calendar Description**

Students are introduced about a comprehensive overview of website development. Students learn major aspects of Web site design and development, including basic Hyper Text Markup Language (HTML), Extensible Hypertext Markup Language (XHTML), Dynamic Hypertext Markup Language (DHTML), Hypertext Transfer Protocol (HTTP), Java Script programming, and Cascading Style Sheets (CSS). Students explore prevailing tools and standards – including the Internet, World Wide Web, client-server, Hypertext Markup Language 5 (HTML5), Cascading Style Sheets 3 (CSS3), multimedia, database – and are introduced how they function together in today's web environment.

**Educational Objectives/Outcomes**

Upon successful completion of the course, the student will demonstrate the ability to:

1. Identify, interpret structure and page content elements of an HTML5 document.
2. Develop a basic web site with HTML5 elements by creating hyperlinks and image maps.
3. Design and create web page layouts with CSS3 using selectors, text styles, lists, pseudo-items, background, floating objects, box model and positioning elements.
4. Interpret structure and styles of web tables.
5. Identify various parts of web form elements.
6. Design a multimedia web site with audio, video and applets.
7. Enhance a web site with advanced CSS with special effects, print media and for the mobile web.
8. Create a well-formed, valid document.
9. Develop interactive web pages with JavaScript

**Prerequisites**

C or better in COMP 1130 Computer Programming I  
(This course is the prerequisite for COMP 3540 Advanced Web Design and Programming.)

**Required Text**

HTML, CSS, and Dynamic HTML 5<sup>th</sup> Edition Comprehensive New Perspectives: ISBN-13: 978-1-111-52643-6.

## Syllabus – Lecture Topics

- Identify, interpret structure and page content elements of an HTML5 document
- Develop a basic web site with HTML5 elements by creating hyperlinks and image maps
- Design and create web page layouts with CSS3 using selectors, text styles, lists, pseudo-items, background, floating objects, box model and positioning elements
- Interpret structure and styles of web tables
- Identify various parts of web form elements
- Design a multimedia web site with audio, video and applets
- Enhance a web site with advanced CSS with special effects, print media and for the mobile web
- Create a well-formed, valid document
- Develop interactive web pages with JavaScript
  - JavaScript variables
  - JavaScript functions
  - Operators and expressions
  - Date objects and methods
  - Arrays, Loops and Conditional Statements
  - Browser and document object models
  - Events and event handlers
  - Validate client side web pages with JavaScript validation
  - Other miscellaneous topics on JavaScript

## Syllabus - Lab Topics

Lab 1: Application of knowledge of HTML5 structure and page content elements to create a single web page for a web site.

Lab 2: Develop a basic web site to apply the knowledge of hypertexts links and image maps

Lab 3: Format a web page to apply knowledge of CSS3 text and color styles

Lab 4: Create an elastic layout with a drop cap and irregular line wrap to apply knowledge of CSS3

Lab 5: Develop a web page to apply knowledge of web tables and table styles

Lab 6: Develop a web page to apply knowledge of Web forms and CSS3

Lab 7: Develop a web page to apply knowledge of multimedia with audio, video and applets

Lab 8: Develop a web page to apply knowledge of CSS3, print styles and mobile CSS3 to design a web page

Lab 9: Develop a web page to create a well-formed, valid document and validated with a W3C validator for HTML5 and CSS3

Lab 10: Develop an interactive web page using JavaScript variables and functions to display random numbers

Lab 11: Develop an interactive web page using JavaScript operators, expressions, date objects and methods

Lab 12: Develop an interactive web page using JavaScript arrays, loops and conditional statements

Lab 13: Develop an interactive web page using JavaScript event and event handlers for client side validation

On-going project: Develop a fully functional web project by the end of the semester for a business using concepts taught during lectures and applied in the various labs

## ACM / IEEE Knowledge Area Coverage

### Knowledge Areas that contain topics and learning outcomes covered in the course

Knowledge Area (elective)	Total Hours of Coverage
HCI-Human Computer Interaction	Total 1
HCI/Programming Interactive Systems	1
PBD-Platform-Based Development	Total 12
PBD/Web Platforms	12

### Body of Knowledge coverage

KA	Knowledge Unit	Topics Covered	Hours
HCI	Programming Interactive Systems (elective)	Software architecture patterns – Model-View Controller	1
PB D	Web Platforms (elective)	Web programming languages	12
		Web platform constraints	
		Software as a Service	
		Web standards	