**CRN# 13040 CPET 49900-06D Web Systems**

**CRN# 13048 CPET 49900-06I Web Systems**

**Cross Listed**

**CRN# 13041 ITC 25000-01D Web Systems**

**CRN# 13049 ITC 25000-01I Web Systems**

**Fall 2014**

**Course Description  
CPET 499/ITC 250 – Web Systems**, Cr. 3  
ITC 25000 – Web Systems, Cr. 3, Preparation for Course**:** P: or C: ITC21000.  
<http://bulletin.ipfw.edu/content.php?catoid=27&navoid=692&filter%5Bitem_type%5D=3&filter%5Bonly_active%5D=1&filter%5B3%5D=1&filter%5Bcpage%5D=16#acalog_template_course_filter>

A study of essential knowledge and skills that an effective web administrator must know. Introduction to fundamental topics of web technologies, web-based systems, and web page design. Topics covered include Internet applications, web site development and publishing, information architecture, client and server-side programming, multimedia technologies and publishing, vulnerabilities, and web site implementation and maintenance.

**Course Instructor Information**

Paul I-Hai Lin, Professor of Electrical and Computer Engineering Technology

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College of Engineering, Technology, and Computer Science

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Professor’s Course Web site: <http://www.ecet.ipfw.edu/~lin>

My Blackboard Web site: login through mYIPFW

**Office Hours:**

* Monday 1:00 -3:00 PM
* Tuesday 1:00 -3:00 PM, 6:30-7:30 PM
* Wednesday 1:00 -3:00 PM
* Thursday 1:00 -3:00 PM
* Other weekday hours – by appointment

**Course Delivery Format**

* **Live Lecture (3 hrs/week) – in Class, Face-to-Face lectures with echo 360 capture system:**  Room ET 364, Tuesday & Thursday 3:00 – 4:15 PM
* **Internet section students**, login to myIPFW for captured lectures, assignments, and other information

## Important Dates: Sept. 1 – Labor Day Holiday Oct. 13 & 14 – Class suspended (Fall Break) Nov. 26 – 30 - Thanksgiving Recess

**Text Book**

***Programming the World Wide Web***, 8th edition, 2012, by Robert W. Sebesta, published by Pearson, ISBN: 978-0-13-377598-3

**Disabilities Statement**:

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Services for Students with Disabilities (Walb, room 113, telephone number 481-6658), as soon as possible to work out the details. Once the Director has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for SSD at <http://new.ipfw.edu/disabilities/>

**Course Outcomes**

After successfully completing ITC/250 CPET 499, students will have:

* Ability to use all modern browsers and mobile browsers
* Ability to use HTML 5 and CSS to design and implement web pages
* Ability to use client-side scripting language (JavaScript) to create dynamic web pages
* Ability to use XHTML, XML, XSL in web page design
* Ability to design web pages using proper development tools
* Ability to use server-side scripting languages for client-server Web applications
* Ability to design and develop a web site

**Class Activities and Assessment**

The class format will be 3 hour lecture each week, 16 weeks total and require about 8hrs/week for out of class study. Student assignments include programming apps, weekly assignment on reading technical papers, writing short summary, and presentation. Students are also required to complete a final project working in groups of 2-3 students, present projects in class and complete a written project report.

**Grading policy:**

* Homework/assignments (including programming exercises): 35%
* Three one-hour exams: 30%
* Class participation (attendance, class engagement/discussion, forums, etc): 10%
* Final Project: 25%

Grading Scale: A (90-100%), B (80 -89%), C (70-79%), D (60-69%), F (0-59%)

**Tentative Course Outline/Topics of Discussion**

**1. Computer Systems, Internet and Information Technologies -- Week 1**

* Computer Systems & Operating Systems
* Communications Networking
* Internet and World Wide Web
* TCP/IP Protocol Applications
* Internet, Intranet (local TCP/IP networks)
* Firewalls
* Web Browsers (Internet Explorer, Google, Opera, etc)
* Mobile Browsers (Safari, Opera Mobile/Mini, Microsoft IE for Mobile, Firefox Mobile, Skyfire)
* Web pages (HTML hypertext documents): static, dynamic web pages
* Web Servers
* HTTP Protocol, Client/Server model
* Web-enabled Applications

**2. Hypertext Markup Language HTML 5 and Casecading Style Sheet-- Weeks 2, 3, 4**

* Introduction to HTML 5
* HTML Structures: Heading, Linking, Images, Lists, Tables, Forms, Meta elements
* New HTML 5 Input Elements and Types, Datalist elements, Page structure
* CSS Part I: Inline styles, Embedded style sheets, Conflicting styles, Linking External style sheets, Positioning elements, Backgrounds, Element dimensions, Box model and Text floe, Media types and Media queries, Drop-down menus
* CSS Part II: Text shadows, Rounded corners, Color, Box shadows, Linear gradient, Radial gradients, Multiple background images, Animation, Transitions and Transformations, Multicolumn layout, Media queries

**3. Web Applications with Client-Side Scripting -- Weeks 5, 6, 7, 8**

* Intro to Client –side Scripting: JavaSrcipt, VbScript, JavaApplet
* JavasScript Programming I: Control statements, Functions, Arrays, Objects
* Advance JavaScript Programming
* VbScript introduction and Examples
* JavaApplet introduction and Examples
* Advanced HTML 5: Introduction to Canvas

**4. XHTML, XML, Ajax-Enabled Rich Internet Applications -- Weeks 9, 10**

* eXtensible Markup Language (XML)
  + XML Structuring data, Namespaces, Document Type Definition (DTDs), XML Schema Documents
  + XML Vocabularies
  + Extensible stylesheet Language and XSL transformation
  + Document Object Model (DOM)
* Ajax (Asynchronous JavaScript and XML)

**5. Web Servers, Server-side Programming and Databases -- Weeks 11, 12, 13**

* Web server selection (Apache, IIS) and implementation
* Common Gateway Interface (CGI)
* PHP (HyperText Processor)
* Server-side scripting: PHP, Perl CGI, ASP.NET, JavaServlet
* Introduction to Ruby and Rails
* Installation and maintenance
* Introduction to Databases (MySQL, SQL, ORACLE, DB2, etc)
* Web security and vulnerabilities

**6. Web-Based Applications/Final Project -- Weeks 8- 16**