PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

CIW FOUNDATIONS CERTIFICATION EXAM
WEB 2291

Class Hours: 1.0  Credit Hours: 1.0
Laboratory Hours: 0  Revised: Spring 08

Note: This course is not designed for transfer credit.

Catalog Course Description:

The preparatory course for the CIW Foundations exam focuses on web-design skills that are not product- or system-specific and covers fundamental concepts in Internet, Web Page Design, and Networking. This course will use materials that allow students to instantly evaluate the level of IT knowledge achieved and will include practice exams.

Entry Level Standards:

Students taking this course should be proficient in Windows XP

Corequisites:

WEB 2200

Textbook(s) and Other Course Materials:

1. There is no additional textbook for this course.
2. CIW Online Assessment license. This will be provided to you by your instructor.
3. CIW Foundations Certification Exam. You can either take the certification exam at Pellissippi State through the CIW Exam Membership Program (half price~$75) or go to a Prometric Testing Center to take the exam (~$150). If you take the exam at PSTCC, your instructor will order your exam with your lab fee. The certification exam costs approximately $75 for this course (you have already paid a lab fee as part of your tuition that covers the price of the CIW exam for this course).

Information on the CIW Foundations Certification Exam can be found at http://www.ciwcertified.com/exams/1d0410.asp?comm=home&llm=3. This exam (CIW Foundations 1D0-510) specifically

- Contains a total of 85 items—all are scored. The breakdown of scored items by part: Internet Business Foundations--30 items; Site Development Foundations--30 items; Networking Technology Foundations--25 items. To certify, you must correctly answer at least 54 of the 85 scored questions to achieve a total score of 63% or greater.
- You will have 90 minutes to complete the exam.
- Each item offers four solutions or distracters. Exam candidates must select the one best solution for each item.
- The Foundations exam measures skills that are not product- or system-specific. They are a combination of minimal technical and non-technical skills and knowledge required for those interested in developing specific Internet skills as a Web site designer. The exam tests the following common core of Internet skills:
  - Describe infrastructure required to support an Internet connection, including hardware and software components.
  - Explain important Internet communications protocols and their roles in delivering basic Internet services.
Explain the basic principles of the Domain Name System (DNS).

Describe how Web browsers can be used to access the World Wide Web and other computer resources.

Explain how e-mail clients can be used to send simple messages and files to other Internet users.

Describe Internet services, including but not limited to news, FTP, Gopher, Telnet, and network performance utilities such as ping and traceroute.

Explain user customization features in Web browsers, including preferences, caching, and cookies.

Describe security issues related to Web browsing and e-mail, including certificates and viruses.

Explain how to use different types of Web search engines effectively.

Describe how to use the Web to obtain legal and international business information.

Describe issues in developing a corporate Web site, including but not limited to project management, testing, and legal issues.

Explain how HTML files are formatted to maintain compatibility with older Web browsers.

Explain how to include images and graphical formatting in HTML files.

Describe how to create a basic HTML form that accepts user input.

Describe how to test and analyze Web site performance issues.

Explain the features and appropriate use of XML.

Describe networking and its role in the Internet, including protocols, packets, and the OSI reference model.

Explain the role of networking hardware, and configure common PC hardware for operation.

Discuss the relationship between IP addresses and domain names, including assignment of IP addresses within a subnet.

Describe the function and components of the Web server.

Discuss common Internet security issues, including user-level and enterprise-level concerns.

Describe common performance issues affecting Internet servers and resources, including analysis and diagnosis.

Describe how to transmit text and binary files using popular Internet services, including the Web and e-mail.

NOTE: It is not necessary to pass the certification exam in order to pass this course. You will receive credit for taking the exam.

Supplementary Materials:

1. **Software**
The following software should be installed on your system before beginning this class:
   a. Microsoft Windows (98/2000/Me or XP)

2. **CIW Online Assessment license.** Your instructor will enroll you in the CIW Online Assessment system. This system will provide you with practice activities that you will use to pre-assess your skills and review the material covered on the actual certification exam.

NOTE: This course is one of a series in the **Certified Internet Webmaster (CIW)** program offered at Pellissippi State. The CIW certification program validates job-role skills competency for entry-level job seekers and seasoned professionals alike. Candidates can
earn CIW certificates in various information technology (IT) job roles, from the foundational CIW Associate certification, continuing to CIW Professional and specialization certifications, and up to advanced-level Master CIW certifications. The course prepares you for the Master CIW Designer certification. For detailed information, see CIW's website at http://www.ciwcertified.com/

I. Week/Unit/Topic Basis:

**Phase I:**

**Fall/Spring**

- **Weeks 1-6**
  - The instructor will work with you to determine a date toward the end of the semester when you wish to schedule for the exam to be given; you must schedule the exam **at least three weeks** in advance of when you wish to take it. You can take the exam **once**. If you take the exam in the PSTCC CIW Exam lab, your scores will be recorded by the instructor and factored into your grade for this course; if you choose to take the exam in testing center not associated with PSTCC, you will fax your test scores to the instructor so the score can be factored into your grade.

  During Phase I of the semester, you will be studying and working through the companion CIW course (for this exam, the co-requisite course is WEB 2200 CIW Foundations). During this time, you can be using the CIW Online Assessment system to practice and review the material presented.

  **Phase II:**

  **Weeks 7-12**

  - **Summer**
    - **Weeks 5-6**
      - Use CIW Online Assessment to review and practice for the CIW Foundations Certification Exam. Here are some of the activities you can use to help review and prepare for the certification exam:
        - Choose to take a practice exam. The exams simulate the actual tests.
        - Take the quizzes as you work through WEB 2200 CIW Foundations course to be sure you have mastered the material in the manual. The materials allow for:
          - Multiple study modes for adaptive learning
          - Personalized study plan and progress reports
          - Study questions and reference tools
          - Simulations of actual testing environments
          - Alignment and references back to CIW instructor-led courseware
          - Drill-down testing on missed questions

  **Phase III:**

  **Weeks 13-15**

  - **Summer**
    - **Weeks 7-8**
      - Continue to use CIW Online Assessment to review and practice for the CIW Foundations Certification Exam.

      **Take Course Quizzes:** Quizzes have been created in this course. You can take Practice Quizzes (10 items each) before taking the 25-item Quiz that will count. The questions for all quizzes are randomly drawn from the test bank. Your performance on these quizzes will indicate to the instructor that you are studying and learning the skills presented from the companion course and that you are progressing toward successful completion of the certification exam.

      **Schedule and complete CIW Foundations Certification Exam.** You need to schedule the date and time for your exam **at least three weeks** in advance. This is the lead time ProSoft needs for the certification exam to be ordered and scheduled for downloading to the CIW lab at PSTCC. Your instructor will notify you when to complete the sign up form. The certification exam can be taken only **once** in this course.

II. Course Objectives*:
A. Learn to use the Internet and its wide array of useful resources. (I,II,III)

B. Use key Internet technologies, such as Web browsers, e-mail, newsgroups, File Transfer Protocol (FTP), Telnet, and search engines. (II,III,VI)

C. Configure both Netscape Navigator and Microsoft Internet Explorer to access rich multimedia, including RealPlayer, Shockwave and Flash content. (II,III,IV,VI)

D. Use a variety of Web-based search engines to conduct advanced searches and learn the basics of electronic commerce and security issues. (III,VI)

E. Learn Web page creation and other aspects of Web authoring. (I,II,III)

F. Develop Web pages in a text editor and a graphic user interface (GUI) editor. (I,II,III)

G. Learn to use Cascading Style Sheets (CSS) and study the basics of Extensible Hypertext Markup Language (XHTML), JavaScript, Dynamic HTML (DHTML), and the Document Object Model (DOM). (I,II,III,IV,V)

H. Create simple Web pages containing text, graphics, hyperlinks, tables, forms, and frames. (I,II,III)

I. Learn fundamental networking concepts and practices. (V,VI)

J. Learn network architecture and standards, networking protocols, TCP/IP, Internet servers, server-side scripting and database connectivity, principles of e-commerce, and security. (V,VI)

*Roman numerals after course objectives reference goals of the Web Technology program.

III. Instructional Processes*

Students will:

1. Use technology to teach Web page creation and other aspects of Web authoring. *Technological literacy outcome*

2. Use web research to investigate areas of interest in building web sites. *Technological literacy outcome*

3. Use interactive learning through writing, listening, and speaking in the collaborative activities. *Communication outcome*

4. Use research activities to promote independent thinking. *Active Learning Strategies*

5. Use software tools and web development skills to develop web sites that are attractive, functional, and efficient. *Technological literacy outcome*

6. Use key Internet technologies, such as Web browsers, e-mail, newsgroups, File Transfer Protocol (FTP), Telnet, and search engines. *Technological literacy outcome*

*Strategies and outcomes listed after instructional processes reference TBR’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:
Based on the document, the student should be able to:

1. Trace the evolution of the Internet. A
2. Define Transmission Control Protocol/Internet Protocol (TCP/IP) and state how the Internet uses it. A,J
3. Describe how the client/server model functions on the Internet. A
4. Describe push and pull technologies. A
5. Explain the elements required to connect an Internet client to the Internet. B
6. List several criteria for selecting an Internet Service Provider (ISP). B
7. Identify and describe major Internet protocols, such as Hypertext Transfer Protocol (HTTP), e-mail, File Transfer Protocol (FTP), and newsgroups. B
8. Explain domain names and virtual domains. B
9. Describe the functions of the ICANN and the InterNIC. B
10. Identify the purpose and function of Uniform Resource Locators (URLs). A,B
11. Describe the difference among the Internet, intranets, and extranets. A,B
12. Outline the current structure of the Internet. B
13. Describe the origins of the World Wide Web and explain the difference between the Web and the Internet. A
14. Define the term legacy application. A
15. Access, view, and navigate Web pages using various Web browsers. B,C
16. Enter Uniform Resource Locators (URLs). B,C
17. View Web page source code. B,E
18. Set preferences to customize a Web browser. A,B,C
19. Configure browser homepages and manage history folders. A,B,C
20. Configure and employ browser caches. A,B,C
21. Save and organize frequently used Web page addresses in the Favorites and Bookmarks folders. A,B,C
22. Control browser image loading. A,B,C,H
23. Explain the function of the Wireless Application Protocol (WAP). A,B
24. Send and receive e-mail messages using various e-mail client programs. A,B
25. Define and practice "netiquette." A,B
27. Describe the functions of the FTP get and put commands.  A,B
28. Read and post messages to newsgroups.  A,B
29. Access resources using Telnet.  A,B
30. Define objects and their relationships to multimedia.  C
31. Explain the basics of C, C++, Java, JavaScript, ActiveX, JScript and VBScript, and describe how they are related to each other.  A,E,G
32. Describe the purpose of plug-ins and identify plug-ins and viewers, including RealNetworks RealPlayer, Macromedia Shockwave and Flash players, Apple Quicktime, and Adobe Acrobat Reader.  A,C,E
33. Listen to and view multimedia objects within your browser.  A,C,E
34. Identify various file formats, such as MPEG, MP3, MOV, AIFF, AU, WAV, AVI, EPS, TIFF, and RTF.  A,E,H
35. Explain the function of search engines, their use of keywords, and the functions of stats, keyword and full-text searches.  D
36. Use search engines to seek information by using AND, OR, AND NOT, NOT, NEAR, wildcards, plus and minus signs, and Boolean operators to search for graphics, people, and mailing lists on the Internet.  D
37. Describe cookies and their purpose and control Web server access to cookie files on your computer.  D
38. Configure browser security preferences.  D,I,J
39. Explain how authentication, digital certificates, and encryption provide Web security.  E,J
40. Describe a computer virus and explain how to protect your computer from virus attacks.  E,J
41. Identify the purposes of proxy servers and firewalls.  E,J
42. Define electronic commerce and compare it to traditional commerce.  J
43. Identify the principal features of Electronic Data Interchange (EDI, Secure Electronic Transactions (SET), and smart cards.  J
44. Distinguish between creating Web pages using an HTML text editor and a GUI HTML editor.  F
45. Identify Web page design issues and strategies for developing accessible Web pages.  E
46. Identify front-end Web page design issues such as the interface, and back-end Web design issues, such as bandwidth and page names.  E
47. Identify HTML document structure tags, use HTML tags properly, and create simple HTML pages.  F
48. Incorporate image files as stand-alone graphics into web pages, use the Web-safe color palette, and create backgrounds with color and tiled images. F

49. Create hyperlinks for text and images and link to local files, remote sites, and internal anchors within the same file. F,H

50. Create simple and complete HTML tables, understanding the use of table border lines and formatting table rows and cells using attributes. F,H

51. Identify HTML form elements, construct a Web form using all the HTML form elements, and test the Web form using a public test engine. F,H

52. Create client-side image maps by defining the rectangle, circle, and polygon areas in an image and linking the defined areas to URLs. F,H

53. Define image transparency, image interlacing. F,H

54. Define frames and the purpose of the frameset document. F,H

55. Create frames and identify and use the frames tags, targeting links from one frame to another and specifying default targets using the BASE tag. F,H

56. Identify and use different types of GUI HTML editors that create HTML automatically. F

57. Explain how SHTML relates to HTML and XML and create XHTML documents. F,G

58. Identify network architectures and provide at least two defining characteristics for each. I

59. Describe the basic network topology characteristics. I

60. Identify the major operating systems--Microsoft Windows, UNIX, and Novell NetWare--and their respective clients. I

61. Discuss the Open Systems Interconnection reference model (OSI/RM), including the layers and functions at each level. I

62. Explain packets and describe packet creation. I

63. Identify key internetworking protocols and explain the need for multiprotocol networks; compare, contrast, and discuss the functions of network protocols. I,J

64. Define the nature, purpose, and operation essentials of TCP/IP. I,J

65. Describe the basics of a local area network (LAN) and a wide area network (WAN). I,J

66. Define and describe the Internet architecture model and various Internet protocols. J

67. Identify and describe the functions and features of file and print, HTTP, proxy, caching, mail, mailing list, media, DNS, FTP, news, certificate, directory, catalog, fax, and transaction servers. I,J

68. Explain the uses of server-side scripting and define gateways. I,J
69. Define the Common Gateway Interface (CGI) and differentiate between client-side and server-side scripting. I,J

70. Explain the need for network security and identify resources that need security. I,J

71. List and discuss the five major types of firewalls. I,J

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

- **50% of grade: Completion of CIW Foundations Certification Exam.** You do not have to pass the certification exam to pass this course. Your grade for this portion will be determined by the number of points you get correct on the exam. This will be combined with the points you earn on the other two percentage components of the course (Quizzes and Online Communication Tools) shown below.
  - 90% of total correct = A
  - 80% of total correct = B
  - 70% of total correct = C
  - 60% of total correct = D
  - <60% of total correct = F

- **40% of grade: Quizzes--Online.** Quizzes delivered online through this course will be used to measure your progress as you work independently with the CIW Online Assessment system. The questions you are studying and practicing will be included in a question database to be delivered in 25-item quizzes. Questions will be randomly selected from the database for each student for each quiz.

- **10% of grade: Online Communication Tools.** Students will use email and discussion board to communicate with instructor and with each other.

B. Laboratory Expectations:

N/A

C. Field Work:

N/A

D. Other Evaluation Methods:

N/A

E. Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
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<td>D</td>
<td>60-69%</td>
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<tr>
<td>F</td>
<td>59%</td>
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VI. Policies:

A. Attendance Policy:
Pellissippi State Technical Community College expects students to attend all scheduled
instructional activities. As a minimum, students in all courses (excluding videotape and
Web courses) must be present for at least 75 percent of their scheduled class and
laboratory meetings in order to receive credit for the course. (Pellissippi State Catalog)

B. Academic Dishonesty:

You are expected to submit only work that you do yourself. Do not collaborate on work
with other students unless you are given a group project. Failure to observe these rules
could result in you receiving a failing grade or being dismissed from the class with a
grade of F.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students
guilty of academic misconduct, either directly or indirectly through participation or
assistance, are immediately responsible to the instructor of the class. In addition to other
possible disciplinary sanctions which may be imposed through the regular Pellissippi
State procedures as a result of academic misconduct, the instructor has the authority to
assign an F or a zero for the exercise or examination or to assign an F in the course.
(Pellissippi State Catalog).

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical
information to share, or if you need special arrangements in case the building must be
evacuated, please inform the instructor immediately. Please see the instructor privately
after class or in his/her office. Students must present a current accommodation plan
from a staff member in Services for Students with Disabilities (SSWD) in order to
receive accommodations in this course. Services for Students with Disabilities may be
contacted by going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-
7153.

D. Other Policies:

Some exams are to be taken at the Testing Center at Pellissippi State. Policy requires
that you have a photo ID to take a test in the Testing Center. Children are not allowed in
the Testing Center. For location, hours, etc., refer to the Testing Center web site.

If you are taking this course at a distance and cannot come to the Pellissippi State
Testing Center, it will be your responsibility to make arrangements for a proctored
exam. Contact your instructor to discuss this matter.

Facilities: Students must have a valid Pellissippi ID to be presented on demand to gain
access to Pellissippi facilities.

**Hardware/Software Requirements for this Course**

**IBM-type criteria:**

**Hardware:**

- Intel Pentium 4, Intel Centrino, Intel Xeon, or Intel Core Duo (or compatible)
  processor.
- Microsoft Windows XP with Service Pack 2 or Windows Vista Home
  Premium, Business, Ultimate or Enterprise (certified for 32-bit editions)
- 1 GB of RAM
• 5 GB of available hard-disk space
• 1024 x 768 monitor resolution with 16-bit video card
• CD-ROM drive (DVD preferred)
• High-speed Internet connection such as cable modem or DSL recommended, if possible
• Speakers

Software:

• Internet Explorer 6.0 (or higher) with Outlook Express
• Macromedia Shockwave and Flash players. Download free from http://www.macromedia.com/downloads/
• Adobe Acrobat Reader 6.0 or better. Download free from http://www.adobe.com/support/downloads/main.html
• Crypto System FineCrypt version 1.0 (available on the student supplemental CD-ROM that ships with the text)
• OPTIONAL: Netscape 7.0 (full installation)

Macintosh criteria:
Hardware:

• PowerPC G4 or G5 or multicore Intel processor
• Mac OS X v.10.4.8
• 1 GB of RAM
• 7 GB of available hard-disk space
• 1024 x 768 monitor resolution with 16-bit video card
• CD-ROM (DVD preferred)
• High-speed Internet connection such as cable modem or DSL recommended, if possible
• Speakers

Software:

• QuickTime 7.0.4 or better
• Adobe Acrobat Reader 6 or better. Download free from http://www.adobe.com/support/downloads/main.html
• Macromedia Shockwave and Flash players. Download free from http://www.macromedia.com/downloads/

CD-ROM. Each coursebook includes a supplemental CD-ROM with files that are referenced and used in the course (if assigned).