PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

INTERNET TECHNOLOGIES (CIW)
WEB 2200

Class Hours: 3.0 Credit Hours: 3.0
Laboratory Hours: 0 Revised: Fall 08

Note: This course is not designed for transfer credit.

Catalog Course Description:

CIW Foundations teaches basic hands-on skills and knowledge which Internet professionals are expected to understand. The course is divided into three parts: Internet Fundamentals, Web Page Authoring, and Networking Fundamentals. After completing this course, students will be prepared to pass the CIW Foundations Certification Exam.

Entry Level Standards:

Students taking this course should be proficient in Windows XP.

Prerequisites:

WEB 2001 and 2002 and 2003

Corequisites:

WEB 2291

Textbook(s) and Other Course Materials:

1) Textbook Bundle:
   If you have a PC:

   CIW Foundations v1.2 Academic Student Kit w/ eSource
   ISBN: 1-59302-2735
   If you have a MAC:
   CIW Foundations v5 Academic Student Kit w/ Macintosh Labas
   ISBN: 1593021712

   Both bundles include:
   1. Internet Business Foundations: Academic Student Guide published by ComputerPREP/ProsoftTraining
   2. Site Development Foundations: Academic Student Guide published by ComputerPREP/ProsoftTraining

2) Subscription will be provided by the college to the Online Training Video Library from http://lynda.com/ (If paying yourself, you would be subscribing one month after beginning this course for a minimum of one-month subscription at a cost of $25/month.)
3) Supplementary Materials:

1) See Software Requirements for software to be installed before beginning this class
2. CD-ROM. Each coursebook includes a supplemental CD-ROM with files that are referenced and used in the course. The labs will refer you to the CD and you will access these and use the files in the course. The contents of the CD-ROM must be copied to the computer desktop for the files to be modified as directed in the labs.

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/.

You will take an exam preparatory course that includes the certification exam. This 1-hour courses is a co-requisite to this course or can be taken after completing this course; it will be your choice as to the semester you take the exam course.

More information on CIW certification is on the WebCT website for this course.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Weeks 1-3</td>
<td>Internet Business Foundations. You will learn how to work effectively in today's business environment. In this course, you will learn about the tasks involved in various Information Technology (IT) job roles. You will also learn about Internet connection methods, Internet protocols and the Domain Name System (DNS). You will study the basic functions of Web browsers, the components of Web addresses and the use and control of cookies. You will learn how plug-ins can improve your Web-browsing experience, and you will use browsers to download and manage files. You will also learn about databases as they relate to Web search engines, and you will use search engines to conduct basic and advanced Web searches. You will learn about the risks associated with being connected to the Internet, and about the security measures that can keep your computer system and your personal information secure. Finally, you will study the fundamentals elements of project management and the importance of acquiring these skills for all IT job roles.</td>
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| 1 | Lesson 1: Information Technology and the Internet  
Lesson 2: Web Browsing  
Lesson 3: Multimedia on the Web |
| 2 | Lesson 4: Databases and Web Search Engines  
Lesson 5: E-mail and Personal Information Management  
Lesson 6: Internet Services and Tools |
| 3 | Lesson 7: Internet Security  
Lesson 8: IT Project Management |

Weeks Site Development Foundations teaches you essential Web page development
skills. You will learn to develop Web sites using Hypertext Markup Language (HTML) and Extensible HTML (XHTML). You will learn to write code manually, as well as use graphical user interface (GUI) authoring tools. You will also learn to insert images, create hyperlinks, add tables, forms and frames to your Web pages. In addition to learning about XHTML and HTML coding, you will learn about CGI and use it to connect Web pages to databases. Other topics include validating your XHTML code, recognizing the importance of marketing, and implementing fundamental design concepts. Throughout the course, you will learn how Web sites are developed as managed projects. You will also identify e-commerce solutions and relate Web site development to business goals.

Lesson 1: Introduction to Web Site Development
Lesson 2: Markup Language and Site Development Essentials

Lesson 3: XHTML Coding
Lesson 4: HTML Horizontal Rules and Graphical Elements

Lesson 5: Hyperlinks
Lesson 6: Tables

Lesson 7: Web Forms
Lesson 8: Image Techniques

Lesson 9: Frames
Lesson 10: Graphical User Interface (GUI) HTML Editors
Web Page Project

Lesson 11: Advanced Web Technologies
Lesson 12: E-Commerce Practices

Network Technology Foundations teaches essential networking technologies and skills, including TCP/IP, stable network creation, wireless networking and network troubleshooting. You will learn to use various network components and protocols that enable users to share data quickly and easily. You will explore the different types of transmission media, and you will learn how network architecture and topologies provide for efficient and secure communication. In addition, you will learn about the OSI reference model and its relationship to packet creation, and you will compare and contrast the OSI model with the Internet architecture model. You will study the functions and features of internetworking server types, and you will achieve competency in performing basic hardware and operating system maintenance procedures. In addition, you will learn about the importance of RFCs and where to locate the most recent RFC documents. You will experience shared learning objects (located at http://learn.midsouthcc.edu/NF.htm) to learn more about networking, TCP/IP and Internet addressing, Internetworking servers, and network security and IT career opportunities. You will also learn about the importance of routing, and will explore IP addressing, IP address classes and subnet masks. This course will also teach you essential network security concepts, including authentication, encryption and firewalls. Finally, you will explore career opportunities in the IT industry, and will discuss effective ways of communicating technical information.

Lesson 1: Introduction to Networking, Shared Learning Object: Networking

Lesson 2: TCP/IP Suite and Internet Addressing, Shared Learning Object: TCP/IP and Internet Addressing

Lesson 3: Internetworking Servers, Shared Learning Object: Internetworking
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**:  
Upon successful completion of this course, 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 empty 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 statis, 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
List and discuss the five major types of firewalls. IJ

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

V. Evaluation:

A. Testing Procedures:

- Online quizzes will be built into the course. The primary portion of the student's grade will be based on the projects completed and quizzes taken. The purpose of the online quizzes is to encourage the student to work through the exercises and to become familiar with the textbook chapters. The quiz items and settings will be very similar to those taken for the actual CIW Foundations exam.

Grading Procedure:

- Projects and Labs/Activities: 40 percent of grade. Students will be given several lab projects. The projects will be completed in the course of reading and working through the textbook. The Labs/Activities will be uploaded weekly to the web-students server into the student's individual folder.
- Quizzes and Tests: 45 percent of grade. Students will be given a series of non-cumulative theory quizzes and exams over textbook content during the semester. These exams will consist of true/false, multiple choice, and essay questions.
- Online Communication Tools: 15 percent of grade. Students will use email and the 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:

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F 0-59%

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:
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. For the online version of the course, all exams are administered online within the course.

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

**Hardware Requirements for This Course**

IBM-type criteria:

- Intel Pentium 4, Intel Centrino, Intel Xeon, or Intel Core Dup (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
- Video adapter: at least 4 MB
- Speakers

Macintosh criteria:

- 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 Requirements for This Course**

IBM-type criteria:

- Internet Explorer 6.0 (or higher) with Outlook Express
- OPTIONAL: Netscape 7.0 (full installation)

Macintosh Criteria:

- QuickTime 7.0.4 or better

Purchase of other software referenced in the course is **optional.**