

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

COMP 633

COURSE TITLE

WEB SERVER CONFIGURATION

TYPE COURSE

NON-FEE

VOCATIONAL

CATALOG COURSE DESCRIPTION

In this course students will learn about installing Web server software, building upon the basic configuration, and virtual hosting. They will also learn how to determine clients' needs and improve the Web servers performance. Students will learn about logs, statistics and server information to monitor the Web server. (FT)

LECTURE/LABORATORY HOURS

300

ADVISORY

NONE

RECOMMENDED SKILL LEVEL

Possess a 10th grade reading level; ability to communicate effectively in the English language; knowledge of math concepts at the 8th grade level; ability to use a mouse, menus, open and close windows and save files within the Macintosh or Windows operating system; and ability to use an internet browser.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking

SDCE students critically process information, make decisions, and solve problems independently or cooperatively.

4. Personal and Professional Development

SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self advocacy skills to cope with changing situations in their lives.

COURSE GOALS

To provide instruction in the compilation and basic configurations of Web servers. Students will learn the technical aspects of Web servers including security and maintenance. Students will learn the importance of server side programming, log files, search engines, robots and automation. They will learn how to install Web server software, edit and build upon the basic configuration. They will also learn how to determine client needs, how to improve the Web server software's performance, virtual hosting, and how to monitor the server.

COURSE OBJECTIVES

Upon successful completion of this course, students will demonstrate through theory and practical application, problem solving, critical thinking, written and oral communication and mathematical ability that they are able to:

1. Demonstrate knowledge of basic Web server configuration.
2. Demonstrate knowledge of basic server side programming.
3. Describe the purpose and use of log files.
4. Describe the purpose and use of search engines, robots and automation.
5. Describe how to start, stop, restart and test the server.
6. Describe how to build and edit Web server software from scratch.
7. Demonstrate how to configure Web server software.
8. Determine client needs.
9. Improve Web server performance.
10. Monitor Web server performance.
11. Describe how to host more than one site.

SECTION II

COURSE CONTENT AND SCOPE

1. Server Configuration
 - 1.1. Choosing web server software
 - 1.1.1. Server software options
 - 1.1.2. Installing a web server
 - 1.2. Customizing a web server
 - 1.2.1. Typical server configuration options

COURSE CONTENT AND SCOPE (CONTINUED)

- 1.3. Access control
 - 1.3.1. Set permissions
 - 1.3.2. Limit access
- 1.4. Secure sockets layer (SSL) configuration
 - 1.4.1. How SSL is used
- 1.5. Virtual hosts
 - 1.5.1. The basics of virtual hosting
 - 1.5.2. Configuring virtual hosts
2. Server-Side Programming
 - 2.1. Dynamic documents
 - 2.2. CGI and forms
 - 2.3. Server side includes
 - 2.4. Active server pages
 - 2.5. Servlets and java server pages
3. Log Files
 - 3.1. Log file formats
 - 3.2. Referrers
 - 3.3. Being proactive
 - 3.4. Site statistics
4. Search Engines, Robots, and Automation
 - 4.1. Search engines
 - 4.2. Publicizing sites
 - 4.3. Robots and spiders
 - 4.4. Automation
5. Getting Started With Apache
 - 5.1. Installing apache
 - 5.2. Basic configuration
 - 5.3. Starting, stopping and restarting the server
 - 5.4. Testing the server
 - 5.5. Graphical configuration tools
6. Building Apache
 - 6.1. Building apache from scratch
 - 6.2. Editing the configuration by hand and setting values
 - 6.3. Advanced building options
 - 6.4. Building modules with APACI and APXS
7. Configuring Apache
 - 7.1. Where apache looks for its configuration
 - 7.2. How apache structures its configuration
 - 7.3. Where directives can go
 - 7.4. Options and overrides
 - 7.5. Restricting access with allow and deny
 - 7.6. Directory listings
 - 7.7. Apache's environment
 - 7.8. Controlling responses and headers
 - 7.9. Sending content as-is
 - 7.10. Sending a content digest
 - 7.11. Handling the neighbors

COURSE CONTENT AND SCOPE (CONTINUED)

8. Determining Client Needs
 - 8.1. Content handling and negotiation
 - 8.2. Error and response handling
 - 8.3. Aliases and redirection
 - 8.4. Server-side image maps
9. Improving Apache's Performance
 - 9.1. Apache's performance directives
 - 9.2. Configuring apache for better performance
 - 9.3. Proxying
 - 9.4. Caching
 - 9.5. Fault tolerance and clustering
10. Monitoring Apache
 - 10.1. Logs and logging
 - 10.2. Logs and statistics
 - 10.3. Server information
 - 10.4. User tracking
11. Virtual Hosting—Hosting More Than One Site
 - 11.1. User home pages
 - 11.2. Separate servers
 - 11.3. IP-based virtual hosting
 - 11.4. Issues affecting virtual hosting
 - 11.5. Dynamic virtual hosting

APPROPRIATE READINGS

Appropriate readings may include, but are not limited to, periodicals, magazines, instructor-written materials, manuals, computer based training on CD-ROMS (CBT), Web based training (WBT), instructor selected URLs and other publications related to the design and implementation of Web servers and the workings of the Web.

WRITING ASSIGNMENTS

Appropriate writing assignments may include, but are not limited to, preparing text for an assigned project, keeping a journal on all laboratory and project work, creating Web pages, completing all assigned reports, performing mathematical calculations as assigned, and completing all written assignments.

OUTSIDE ASSIGNMENTS

Outside assignments may include, but are not limited to, reading texts, reference resources or handouts; Internet sites, computer based training on CD-ROMS (CBT), Web based training (WBT), and research as needed to complete projects; and organizing and preparing written answers to assigned questions.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Assignments which demonstrate critical thinking may include, but are not limited to, analysis and evaluation of reading assigned text and computer based training on CD-ROMS (CBT), Web based training (WBT) materials and utilize this analysis in classroom discussions, writing assignments, and in performing laboratory activities. Students must select and use appropriate methods and materials needed to complete laboratory assignments.

EVALUATION

A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of student's ability to:

1. Apply theory to assignments.
2. Complete all lessons, which may include CBT, WBT, and laboratory assignments.
3. Successfully complete all exams, including any online exams.
4. Perform on written, oral, or practical examinations.
5. Contribute to class discussions.
6. Maintain attendance per current policy.
7. Demonstrate ability to work independently and as a team member.
8. Demonstrate troubleshooting skills.
9. Demonstrate ability to help others learn.

Upon successful completion of each individual course a Certificate of Course Completion will be issued. Upon successful completion of all courses included in the program a Certificate of Program Completion will be issued.

METHOD OF INSTRUCTION

Methods of instruction may include, but are not limited to, lecture, computer based training on CD-ROMS (CBT), Web based training (WBT), self-paced lab, demonstration, individualized study, use of audio-visual aids, group/team work, tutorials, outside assignments, guest lectures, field trips, and guided student job assignments. This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

Texts:

Administrating Web Servers, Security, and Maintenance, Prentice Hall PTR,
ISBN 0-13-022534-7

Professional Apache, Wrox Press Ltd., ISBN 1-861003-02-1

Professional Apache 2.0, Peter Wainwright, Poornachandra, Dr. Sarang, Afrasiab Ahmad, Sean Chittenden, Vivek Chopra, Micheal Link, Stephen G. Wadlow, Mathew Antony; Wrox Press; ISBN-10: 1861007221

Linux Web Server Toolkit, Nicholas Wells, IDG Books Worldwide (205); March 1998,
ISBN: 0764531670

TEXTS AND SUPPLIES (CONTINUED)

Apache Web Server Installation and Administration Guide, Gordon McComb, luniverse.com (999); August 1999, ISBN: 1583483705

Methodology for Client/Server and Web Application Development, Robert Fournier, Yourdon Press (231); September 1998, ISBN: 0135984262

URLs:

<http://www.phptr.com/phptrinteractive>

<http://php.net/>

<http://www.mysql.com/>

http://www.phpmyadmin.net/home_page/index.php

<http://www.microsoft.com/en/us/default.aspx>

<http://www.spade.com/linux/howto/WWW-mSQL-HOWTO.html>

<http://tcbworks.cba.uga.edu/~adennis/Lab3.htm>

<http://hoohoo.ncsa.uiuc.edu/cgi/intro.html>

<http://www.aca.vt.edu/webspinners/main.htm>

Supplies:

Pen, journal (composition book), notebook paper and a soft 3-ring binder, or a one-subject 110 sheet college ruled notebook, and appropriate storage media such as a USB Drive or Zip.

PREPARED BY Karen Owen and Cynthia Scott DATE 2/22/2000

REVISED BY Paul Richard DATE 2/22/2007

REVISED BY Instructional Services/SLO's Added DATE December 18, 2013

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog