

CSET 4150 Web System Administration (3 semester credit hours)

CSET Elective  
IT Required**Current Catalog Description:**

Installation and configuration of the web server operating systems (e.g., UNIX, Windows), installation and administration of Web daemon (e.g., Apache, Microsoft IIS). Site management, including file and directory hierarchy, Web log analysis, installation and configuration of various utilities for gopher, ftp, text ending and e-mail.

Prerequisite: CSET 2200 and junior standing

**Textbooks:**

“Apache, The Definitive Guide,” 3rd Edition; Ben Laurie, Peter Laurie; 2002.

**References:**

Course web pages: <http://cset.sp.utoledo.edu/cset4150/>

**Related Program Outcomes:**

CSET Program Outcomes (b, i and j)

IT Program Outcomes (b, and i):

See attached table

**Course Objectives:**

After successful completion of this course, students will be able to:

- Install a Web server and configure it to perform a specific task.
- Start and restart a web server
- Configure a web server to execute CGI scripts
- Configure a web server to provide authentication services
- Manipulate files on the web server
- Redirect web services to alternate URLs
- Determine the status of web servers
- Read and parse server logs
- Understand and describe web process for providing ssl services in a web environment
- Set up mail server

**Major Topics Covered in the Course**

Topic	Hours
How Does Apache Work? What to Know About TCP/IP How Does Apache Use TCP/IP?	
Apache's Flags	1.5
Block Directives	1.5
Virtual Hosts	3

Topic	Hours
HTTP Response Headers	
Restarts .htaccess CERN Metafiles Expirations	3
Common Gateway Interface (CGI) Writing and Executing Scripts Script Directives	3
Debugging Scripts Setting Environment Variables suEXEC on Unix Handlers Actions	3
Authentication Authentication Protocol Authentication Directives Passwords Under Unix Order, Allow, and Deny Digest Authentication	3
Anonymous Access Automatic User Information Using .htaccess Files Overrides	3
MIME, Content and Language Negotiation	0.5
Indexing	3
Redirection	1.5
Proxy Server, Proxy Directives, Caching	1.5
Server-Side Includes	1.5
Server Status, Server Info, Logging	0.5
Authentication	1.5
Blocking Access Counters Faster CGI Programs FrontPage from Microsoft Languages and Internationalization Server-Side Scripting Throttling Connections URL Rewriting Miscellaneous: MIME Magic, DSO	3.0
Security	0.5
Apache-SSL	0.5
The Apache API	0.5
Writing Apache Modules	1.5
Totals	37

**Laboratory Projects:**

Students implement a Unix operating system and provide user services, internetwork services and application services to serve external “client” requests.

**Oral and Written Communications**

Midterm and Final examinations are written using essay format. In addition to being evaluated for technical content, all written materials are evaluated for grammar, spelling and punctuation.

**Social and Ethical Issues**

None

**Theoretical Content**

None

**Problem Analysis**

In assignments and exams, students are presented with a series of tasks to implement web services and functionality.

**Solution Design**

None

**Course Coordinator:**

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2-24-2011

Syllabus: CSET 4150

CSET	Student Outcomes:	Course Outcomes	Assessment Methods
a	An ability to select and apply knowledge of computing and mathematics appropriate to the discipline. More specifically, an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices. [CAC-j]		
b	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	install and troubleshoot Web server problems	Graded web server assignments
c	An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs and to apply design and development principles in the construction of software systems of varying complexity. [CAC-k]		
d	An ability to function effectively as a member or leader on technical teams to accomplish a common goal.		
e	An understanding of professional, ethical, legal, security and social issues and responsibilities including a respect for diversity.		
f	An ability to communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.		
g	An ability to analyze the local and global impact of computing on individuals, organizations, and society.		
h	Recognition and understanding of the need for and an ability to engage in self-directed continuing professional development.		
i	An ability to select and apply current techniques, skills, and tools necessary for computing practice.	use the current standard web engines to solve computing problems	Graded assignments
j	An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	implement a variety of Web services to accomplish computing tasks	Graded Exams, homework
k	A commitment to quality, timeliness, and continuous improvement.		

Syllabus: CSET 4150

IT	Student Outcomes:	Course Outcomes	Assessment Methods
a	an ability to select and apply knowledge of computing and mathematics appropriate to the discipline. Specifically, an ability to use and apply current technical concepts and practices in the core information technologies. [IT-j]		
b	an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	install and troubleshoot Web server problems	Graded web server assignments
c	an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. And, an ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. [IT-k]		
d	an ability to function effectively as a member or leader on technical teams to accomplish a common goal.		
e	an understanding of professional, ethical, legal, security and social issues and responsibilities including a respect for diversity.		
f	an ability to communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.		
g	an ability to analyze the local and global impact of computing on individuals, organizations, and society.		
h	recognition and understanding of the need for and an ability to engage in self-directed continuing professional development.		
i	an ability to select and apply current techniques, skills, and tools necessary for computing practice. And an ability to effectively integrate IT-based solutions into the user environment. [IT-l]	use the current standard web engines to solve computing problems	Graded assignments
j	an understanding of best practices and their application. [IT-m]		
k	an ability to assist in the creation of an effective project plan. [IT-n]		