

**ITT Technical Institute**  
**IT300**  
**Web Server Administration**  
**Onsite Course**

**SYLLABUS**

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**Credit hours:** 4

**Contact/Instructional hours:** 50 (30 Theory Hours, 20 Lab Hours)

**Prerequisite(s) and/or Corequisite(s):**

Prerequisites: IT220 Network Standards and Protocols

**Course Description:**

Installation, configuration and management of typical Web server(s) will be introduced in this course. Topics on network-related Web technologies and implementation will be discussed.

# SYLLABUS: Web Server Administration

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Instructor: \_\_\_\_\_

Office hours: \_\_\_\_\_

Class hours: \_\_\_\_\_

## Course Overview

This course covers the installation, configuration, and management of two industry leading Web Servers – Apache and Internet Information Server – both of which will be introduced in this course. Topics on platform- and network-related Web Technologies and their implementation will be discussed.

## Major Instructional Areas

1. Server Installation and Configuration
2. Network Protocols on the Internet
3. Serving Content: Static & Dynamic
4. MPM, Filtering, and Virtual Hosting
5. Monitoring Network and Server Performance
6. Moodle and Media Wiki: PHP-MySQL Projects
7. Various Apache Topics and Projects
8. Various IIS Topics and Projects
9. Self Paced Performance Evaluation

### Unit 1 – Server Installation and Configuration

- Introducing Microsoft Windows Server 2003
- Windows Server 2003 Security Overview
- Installing Windows Server 2003 and Preparing for Fedora Core 4
- The Windows Server 2003 Administrative Environment
- Configuring a Windows Server
- Installation of Fedora Core 4 and a short Linux Overview

### Unit 2 – Network Protocols

- Apache and the Web
- Working with Network Protocols
- Command-line Interface (CUI)

### Unit 3 – Serving Content with Apache

- Understanding Apache Internals
- Getting Started with Apache
- Using Apache to Serve Static Content
- Serving Dynamic Content with CGI

### Unit 4 – MPM, Filtering, and Virtual Hosting

- Content Negotiation and Environment Variables
- Multi-Processing Modules
- Filtering Modules
- Virtual Hosting

### Unit 5 – Intermediate and Advanced Apache Topics

- Publishing Extensions
- Setting up a Secure Server
- Working with Certificates
- Restricting Access
- Logging and Monitoring
- Tuning Apache
- Apache as a Proxy Server
- Extending Apache
- PHP (moodle and mediawiki projects)
- mod\_perl Overview
- mod\_rewrite overview (URI rewriting examples)
- Additional Apache Modules and Projects

### Unit 6 – IIS 6 Basics

- Mid-term Examination
- Understanding Share and NTFS Permissions
- Using Internet Information Server 6.0
- Understanding and Configuring the Internet Connection Firewall

### Unit 7 – Monitoring Network and Server Performance

- Understanding Domain Name Services
- Monitoring System Performance

### Unit 8 – Active Directory Basics

- Creating an Active Directory Server Role
- Creating Active Directory Groups, OU, and Sites
- Adding Client Computers and Member Services

### Unit 9 – IIS 6 and Open Source

- Preparing IIS 6 for migration from Apache 2

### Unit 10 – Migration

- Moodle Migration from Apache to IIS
- Review Migration Issues

### Unit 11 – Final Examination

- Final examination

## **Course Objectives**

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

- Install and Configure a Dual Boot Development Server
- Configure an IIS 6 Role on Window Server 2003
- Configure an Apache 2 Server on Fedora Core 4
- Understand Web Servers functional use

- Understand Web Servers organizational role
- Deploy Static and Dynamic Content
- Understand Web Server Design Concepts
- Understand Web Server Security Procedure
- Implement and Deploy SSL Certificates
- Implement and Deploy PHP-MySQL Web Sites
- Understand Relationship between DNS and Virtual Hosting
- Understand, Implement and Deploy CGI Scripting

Install and Configure a Dual Boot Development Server

## Teaching Strategies

The curriculum is designed to promote a variety of teaching strategies that support the outcomes described in the course objectives and that foster higher cognitive skills. Delivery makes use of various media and delivery tools in the classroom.

## Course Resources

### Student Textbook Package

Lopez, & Habraken. (2006). *Web Server Administration* (Custom ed.). Boston, MA: Pearson Custom

### About the Textbook

The student text book is compiled from two *Sam's Teach Yourself* books. The custom table of contents was specifically arranged for **IT300** from these two titles:

*Sam's Teach Yourself Apache 2 in 24 Hours*  
by Daniel Lopez Ridruejo (0672323559)

*Sam's Teach Yourself Microsoft Windows Server 2003 in 24 Hours*  
by Joe Habraken (0672324946)

### Chapter Correlation Chart for Custom Textbook, *Web Server Administration*

Custom <i>Web Server Administration</i> Chapter	Corresponds to:	Original Source Material Chapter/Hour
Chapter 1: Introducing Microsoft Windows Server 2003		Hour 1: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 2: Windows Server 2003 Security Overview		Hour 2: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 3: Installing Windows Server 2003		Hour 3: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 4: The Windows Server 2003 Administrative Environment		Hour 4: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 5: Configuring a Windows Server		Hour 5: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 6: Apache and the Web		Hour 1: Sams Teach Yourself Apache2 in 24 Hours
Chapter 7: Working with Network Protocols		Hour 7: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 8: Understanding Apache Internals		Hour 2: Sams Teach Yourself Apache2 in 24 Hours

Chapter 9: Getting Started with Apache	Hour 4: Sams Teach Yourself Apache2 in 24 Hours
Chapter 10: Using Apache to Serve Static Content	Hour 5: Sams Teach Yourself Apache2 in 24 Hours
Chapter 11: Serving Dynamic Content with CGI	Hour 6: Sams Teach Yourself Apache2 in 24 Hours
Chapter 12: Content Negotiation and Environment Variables	Hours 9: Sams Teach Yourself Apache2 in 24 Hours
Chapter 13: Multi-processing Modules	Hour 11: Sams Teach Yourself Apache2 in 24 Hours
Chapter 14: Filtering Modules	Hour 12: Sams Teach Yourself Apache2 in 24 Hours
Chapter 15: Virtual Hosting	Hour 14: Sams Teach Yourself Apache2 in 24 Hours
Chapter 16: Publishing Extensions	Hour 13: Sams Teach Yourself Apache2 in 24 Hours
Chapter 17: Setting up a Secure Server	Hour 17: Sams Teach Yourself Apache2 in 24 Hours
Chapter 18: Working with Certificate Services	Hour 23: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 19: Restricting Access	Hour 7: Sams Teach Yourself Apache2 in 24 Hours
Chapter 20: Logging and Monitoring	Hour 8: Sams Teach Yourself Apache2 in 24 Hours
Chapter 21: Tuning Apache	Hour 16: Sams Teach Yourself Apache2 in 24 Hours
Chapter 22: Apache as a Proxy Server	Hour 15: Sams Teach Yourself Apache2 in 24 Hours
Chapter 23: Extending Apache	Hour 18: Sams Teach Yourself Apache2 in 24 Hours
Chapter 24: PHP	Hour 19: Sams Teach Yourself Apache2 in 24 Hours
Chapter 25: mod_perl	Hour 20: Sams Teach Yourself Apache2 in 24 Hours
Chapter 26: Dynamic URI Resolution with mod_rewrite	Hour 22: Sams Teach Yourself Apache2 in 24 Hours
Chapter 27: Additional Apache Module and Projects	Hour 24: Sams Teach Yourself Apache2 in 24 Hours
Chapter 28: Understanding Share and NTFS Permissions	Hour 13: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 29: Using Internet Information Service 6.0	Hour 24: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 30: Using Internet Connection Sharing and Network Address Translation	Hour 22: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 31: Understanding the Domain Name Service	Hour 15: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 32: Monitoring System and Network Performance	Hour 20: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 33: Introducing Active Directory	Hour 8: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 34: Creating Active Directory Groups, Organizational Units and Sites	Hour 9: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 35: Adding Client Computers and Member Servers to the Domain	Hour 10: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
Chapter 36: Understanding Group Policy and User Profiles	Hour 11: Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours
<b>Source</b> Custom <i>Web Server Administration</i> textbook, Pearson Custom Publishing, ISBN: 0536125112	<b>Source</b> <i>Sams Teach Yourself Microsoft Windows Server 2003 in 24 Hours</i> , Joe Habraken, ISBN: 0672324946 <i>Sams Teach Yourself Apache2 in 24 Hours</i> , Daniel Lopez, ISBN: 0672323559

## References and Resources

### ITT Tech Virtual Library

Login to the ITT Tech Virtual Library (<http://www.library.itt-tech.edu/>) to access online books, journals, and other reference resources selected to support ITT Tech curricula.

#### ■ Web Resources

- <http://itt-tech.edu/curriculum.asp?id=24>
- <http://library.itt-tech.edu/curriculum.asp?id=30>
- <http://library.itt-tech.edu/curriculum.asp?id=37>
- <http://httpd.apache.org/>
- <http://www.microsoft.com/>
- <http://apache2triad.sf.net/>
- <http://php.net/>
- [http://www.directionsonmicrosoft.com/sample/DOMIS/update/2002/07jul/0702riawns\\_illo1.htm](http://www.directionsonmicrosoft.com/sample/DOMIS/update/2002/07jul/0702riawns_illo1.htm)
- <http://www.moodle.org/>
- <http://mediawiki.org/>
- <http://www.mysql.com/>
- <http://perl.apache.org/>
- <http://www.microsoft.com/technet/prodtechnol/windowsserver2003/technologies/webapp/iis/default.msp>
- <http://support.microsoft.com/default.aspx?scid=kb;en-us;q323358>
- <http://www.securityfocus.com/infocus/1765>
- <http://www.microsoft.com/technet/security/tools/tools/locktool.asp>
- <http://www.microsoft.com/technet/security/tools/tools/Uriscan.asp>
- [http://www.windowsecurity.com/articles/Installing\\_Securing\\_IIS\\_Servers\\_Part1.html](http://www.windowsecurity.com/articles/Installing_Securing_IIS_Servers_Part1.html)
- [http://www.peterguy.com/php/install\\_IIS6.html](http://www.peterguy.com/php/install_IIS6.html)

All links to Web references outside of the virtual library are always subject to change without prior notice

## Evaluation & Grading

### Course Requirements

#### 1. Attendance and Participation

Regular attendance and participation are essential for satisfactory progress in this course.

#### 2. Completed Assignments

Each student is responsible for completing all assignments on time.

#### 3. Team Participation (if applicable)

Each student is responsible for participating in team assignments and for completing the delegated task. Each team member must honestly evaluate the contributions by all members of their respective teams.

## Evaluation Criteria Table

The final grade will be based on the following weighted categories:

CATEGORY	WEIGHT
Homework Assignments	10%
Labs & Case Studies	30%
Mid-term Exam	15%
Projects	15%
Final Exam	20%
Quizzes & Participation	10%
<b>Total</b>	<b>100%</b>

## Grade Conversion Table

Final grades will be calculated from the percentages earned in class as follows:

A	90 – 100%	4.0
B+	85 -- 89%	3.5
B	80 -- 84%	3.0
C+	75 -- 79%	2.5
C	70 -- 74%	2.0
D+	65 -- 69%	1.5
D	60 -- 64%	1.0
F	< 60%	0.0

## Course Outline

Week	Lesson	Lesson Title	Reading	Activity Type				
				Writing Assignment	Quiz	Discussion	Project	Center
1	1	Set-up	Student Study Notes and Chapters 1 - 5: <b>Install Dual Boot Server</b>	1	1	Set-up	<b>Install Dual Boot Server</b>	
	2	Installation	Student Study Notes: <b>Install Windows Server 2003 &amp; Fedora Core 4</b>			Installation	<b>Install Windows Server 2003 &amp; Fedora Core 4</b>	
	3	Linux Review	Student Study Notes: <b>Linux Review</b>			Linux Review	<b>Linux Review</b>	
2	1	Apache WWW	Student Study Notes and Chapters 6: <b>Apache and the Web</b>	2	2	Apache WWW	<b>Apache and the Web</b>	

	2	Protocols	Student Study Notes and Chapters 7: <b>Network Protocols</b>			Protocols	<b>Network Protocols</b>			
3	1	Internals	Student Study Notes and Chapters 8: <b>Understanding Apache Internals</b>	3	3	Internals	<b>Understanding Apache Internals</b>			
	2	Get Started	Student Study Notes and Chapters 9: <b>Getting Started with Apache</b>			Get Started	<b>Getting Started with Apache</b>			
	3	Static	Student Study Notes and Chapters 10: <b>Using Apache to Serve Static Content</b>			Static Content	<b>Using Apache to Serve Static Content</b>			
	4	Dynamic	Student Study Notes and Chapters 11: <b>Serving Dynamic Content with CGI</b>			Dynamic Content	<b>Serving Dynamic Content with CGI</b>			
4	1	Negotiation	Student Study Notes and Chapters 12: <b>Content Negotiation and Environment Variables</b>	4	4	Negotiation	<b>Content Negotiation and Environment Variables</b>			
	2	MPM	Student Study Notes and Chapters 13: <b>Multi-Processing Modules</b>			MPM	<b>Multi-Processing Modules</b>			
	3	Filtering	Student Study Notes and Chapters 14: <b>Filtering Modules</b>			Filtering	<b>Filtering Modules</b>			
	4	Hosting	Student Study Notes and Chapters 15: <b>Virtual Hosting</b>			Hosting	<b>Virtual Hosting</b>			
5	1	SELECTED	<b>Choose from among various Assignments</b>	5		SELECTED	<b>Choose from among various Assignments</b>			
	2	<b>Mid-Term</b>	<b>Mid-term Examination</b>			<b>Mid-Term</b>	<b>Mid-term Examination</b>			



6	1	NTFS	Student Study Notes and Chapters 28: <b>Understanding Share and NTFS Permissions</b>	6		NTFS	<b>Understanding Share and NTFS Permissions</b>			
	2	IIS6	Student Study Notes and Chapters 29: <b>Using Internet Information Server 6.0</b>			IIS6	<b>Using Internet Information Server 6.0</b>			
	3	Firewall	Student Study Notes and Chapters 30: <b>Understanding and Configuring the ICF</b>			Firewall	<b>Understanding and Configuring the ICF</b>			
7	1	DNS	Student Study Notes and Chapters 31: <b>Understanding DNS</b>	7		DNS	<b>Understanding DNS</b>			
	2	Monitoring	Student Study Notes and Chapters 32: <b>Monitoring System and Network Performance</b>			Monitoring	<b>Monitoring System and Network Performance</b>			
8	1	ADS	Student Study Notes and Chapters 33: <b>Introducing Active Directory</b>	8		ADS	<b>Introducing Active Directory</b>			
	2	Groups	Student Study Notes and Chapters 34: <b>Creating AD Groups, OU, and Sites</b>			Groups	<b>Creating AD Groups, OU, and Sites</b>			
	3	Members	Student Study Notes and Chapters 35: <b>Adding Client Computers and Member Services</b>			Members	<b>Adding Client Computers and Member Services</b>			
	4	Policies	Student Study Notes and Chapters 36: <b>Understanding Group Policy and User Profiles</b>			Policies	<b>Understanding Group Policy and User Profiles</b>			

9	1	Topics	[Student Study Notes Covering Selected IIS6 Topics]			Topics	Student Study Notes Covering IIS6			
10	1	Migration	[Student Study Notes Covering Migration Between IIS6 and Apache Topics]			Migration	Student Study Notes Covering Migration Between IIS6 and Apache			
11		Final	Final Examination			Final	Final Examination			

**Intent/Interface**

The short-term goal of IT300 is to teach the student Web server administration skills that will prove immediately useful in a variety of personal and professional situations. The long-term goal is to focus the student's awareness concerning various Web-centric deployment issues with emphasis on compatibility and security.

The student will be better prepared for this class by completing IT220 Network Standards and Protocols. This class is a requirement within the Web Development Curriculum.