ECSC 325 – Web Server Administration

Spring 2025 - Section 200

Instructor:	Prof. Jason Patalon
	Office: Ross Hall 147
	jpatalon@edinboro.edu
Class Info:	Tuesday's: 5:00 – 6:15 PM: Ross Hall 128
	Thursday's: 5:00 – 6:15 PM: Ross Hall 128
Office Hours:	Tuesday's: 4:15 – 5:00 PM: Ross Hall 128/147, Zoom available upon request
	Thursday's: 4:15 – 5:00 PM: Ross Hall 128/147, Zoom available upon request
	Additional in-person or Zoom office hours also available by appointment

Course Websites

D2L: Lecture notes, readings, announcements, class files, assignments, and grades. Log on at my.edinboro.edu

jpatalon.cs.edinboro.edu – Lecture notes, readings, announcements, class files, and assignments.

Course Description

This course introduces students to the theory and practice of installing, configuring and maintaining network services required to support a web site. Students will install, configure, optimize and perform restorable system backups for various software services on multiple operating systems. Prerequisites CSCI 230 and CSCI 280.

Course Objectives

1. Install, configure, deploy and maintain web servers.
2. Install, configure, deploy and maintain database servers.
3. Maintain effective system backups.
4. Understand the basic theory of operation of web site related services.
5. Establish and maintain secure systems.

Course Materials

Required textbook: Linux Administration: A Beginners Guide, Seventh Edition, 2016
   ISBN: 978-0071845366

Recommended Textbook: The Practice of System and Network Administration, Third Edition, 2016
   ISBN: 978-0321919168

Recommended: 16GB or larger USB flash drive or comparable cloud storage.

Attendance

Regular and punctual attendance is expected; attendance is taken every class. This course will follow attendance guidelines set forth in the Class Attendance Policy and Procedure section of the university catalog. Any in-class exercises must be done in class and are not available for make-up.

Title IX Reporting Requirements

Edinboro University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: https://www.pennwest.edu/_resources/docs/about/sexual-harassment-brochure-edinboro.pdf

Technology Use

The use of cell phones or other communication devices during class is disruptive to the learning environment and prohibited from use during class. If there is an emergency which requires immediate attention, students must leave the classroom to take any calls.

Grading Policy

Grades will be given according to the following breakdown:

Description	Percentage	Points
Attendance	6.00%	84
Midterm Exam	21.43%	300
Final Exam	21.43%	300
Assignments	51.14%	716
Total Points		1400

Grading Scale

Percentage	Grade		Percentage	Grade
90.0-100.0	A		70.0-76.9	C
87.0-89.9	B+		67.0-69.9	D+
80.0-86.9	B		60.0-66.9	D
77.0-79.9	C+		0-59.9	F

Course Policies

- Attendance will be taken randomly during class, and may be taken multiple times during the same class.
- Disruptive behaviors, including but not limited to excessive talking, arriving late, sleeping, or using unauthorized electronic devices during class is counterproductive to the learning environment and not permitted. Repeat offenders may be administratively withdrawn according to university policy.
- Do your own work! There is no tolerance for cheating or plagiarism. Students engaged in dishonest academic activity may receive a lower or failing grade, or other academic sanctions including suspension or expulsion.
- Turn in all homework on time. Late homework assignment submissions are not accepted. Homework assignments are due at the end of the day (11:59:59PM Eastern Time) of the day specified.
- All exams must be taken during the scheduled class time, unless prior approval is given from the instructor. In the case of a different exam time, the exam given may be different from the exam given in class.
- Inform the instructor of any special needs or arrangements, including university sport or disability requirements, at the beginning of the semester! If you require accommodations for test-taking from the Office for Students with Disabilities (OSD), please provide the appropriate accommodation documentation during the first week of the semester. You must also provide a test accommodation form for each test in which the accommodation will be required. This documentation should be provided to me at least one week prior to the scheduled exam.
- Email is typically responded to within 24 hours, and is a best effort for replies depending on circumstances.
- Additional course topics, tasks, and items may be added, as technology changes and time permits.
- Live Zoom sessions of classes for health and safety reasons may be provided with prior arrangement.
- Use of AI for assignment completion is not permitted and may result in a rejection of submitted work.
- **DISCLAIMER!** Any information in this document is subject to change at any time without notice.

Tentative Course Schedule - Exact schedule and topics may change.

Week 1 1/14/2025 1/16/2025	Syllabus Servers Networks Storage Protocols Services Applications Assignment 1 Book: Introduction, Chapter 1	Week 8 3/4/2025 3/6/2025	Spring Break No class or office hours!
		Week 9 3/11/2025 3/13/2025	Web server Installation Apache Config Web page configuration Web programming environment Assignment 8 Book: Chapter 19
Week 2 1/21/2025 1/23/2025	Server Types & Components Fault Tolerance Network Connections & Components TCP, IP Addressing, Subnetting Storage Types Assignment 2 Book: Chapters 11-12	Week 10 3/18/2025 3/20/2025	HTML Forms PHP MariaDB Assignment 9 Book: Chapters 20
Week 3 1/28/2025 1/30/2025	Disaster Planning Environments High Availability & Clustering Backup Systems Assignment 3 Book: Chapters 9-10	Week 11 3/25/2025 3/27/2025	E-Mail Services SMTP, POP3 Postfix, Dovecot SquirrelMail, Roundcube Assignment 10 Book: Chapter 17
Week 4 2/4/2025 2/6/2025	Server Installation Initial configuration Assignment 4 Book: Chapters 2-4	Week 12 4/1/2025 4/3/2025	File Transfer Services FTP, SCP SMB/CIFS Assignment 11 Book: Chapters 7-8
Week 5 2/11/2025 2/13/2025	User management File permissions & management Account properties SSH, VNC, RDP, Booting Assignment 5 Book: Chapters 5-6	Week 13 4/8/2025 4/10/2025	Security HTTP authentication Assignment 12 Book: Chapter 13
		Week 14 4/15/2025 4/17/2025	Firewall HTTPS/SSL Monitoring Lab Time Assignment 13 Book: Chapter 14
Week 6 2/18/2025 2/20/2025	Domain Name Services Bind Assignment 6 Book: Chapter 16		
Week 7 2/25/2025 2/27/2025	Midterm Exam (2/27/25) Web servers User webpages & permissions Virtual directory Virtual hosts Assignment 7 Book: Chapter 18	Week 15 4/22/2025 4/24/2025	Cloud, Automation, The Future… Performance Tuning Lab Time Assignment 14 Book: Chapter 15
		Week 16 4/29/2025	Review and remaining info Final Exam

Course Outline:

I.   Planning and Implementing Large Projects
        A.   Collecting Requirements
        B.   Evaluating Needs
        C.   Documentation

II.   Network Concepts
        A.   Practical IP (Internet Protocol)
        B.   Domain Name Services
        C.   Networking Hardware
        D.   Survey of Network Protocols
                1.   Hyper Text Transfer Protocol
                2.   Secure Shell
                3.   Telnet

III.   Web Servers
        A.   Survey of Existing Web Server Software
        B.   Installation and Configuration
        C.   Performance Tuning and Access Monitoring
        D.   Backup and Recovery
        E.   Extending and Adding Packages

IV.   Database Servers
        A.   Survey of Existing Database Server Software
        B.   Installation and Configuration
        C.   Backup and Recovery

V.   Security
        A.   Overview of Network Security
        B.   Securing Web Servers
        C.   Database Security