CSCE 3605, System Administration

Instructor: Mark D. Hoffman
Office Hours: TBD
Email: mark.hoffman@unt.edu

Current Catalog Description:

CSCE 3605 - Systems Administration

3 hours

Prepares students with an understanding of virtual machines with universal principles that apply to all operating systems structure and operation including the concepts of processes, resource and file management and performance. Students also develop an understanding of the pervasive use of Unix-based operating systems in the design of various systems such as switches, routers, load balances, wireless controllers and network management platforms to provide various services to support interaction between computer-based systems.

Prerequisite(s): CSCE 3600.

Recommended Text book:

UNIX and Linux System Administration Handbook (5th Edition) by Evi Nemeth (Author), Garth Snyder (Author), Trent R. Hein (Author), Ben Whaley (Author), Dan Mackin (Author)

Other References:

1. Essential System Administration, Third Edition by Æleen Frisch,
2. Ubuntu Server: Administration and Reference
3. Various Microsoft, Apple and Linux online resources

Course Outcomes:

1. **Identify and analyze user needs.**
2. **Structure user requirements in the selection, creation, evaluation, and administration of computer-based systems.**
3. **Demonstrate an understanding of the principles of computer systems maintenance by providing and maintaining computers for users with a wide range of computing needs and abilities.**

4. **Design various hardware components such as switches, routers, load balancers, wireless controllers, and network management platforms to provide network services that support interaction among computer-based systems.**
5. **Effectively integrate IT-based solutions into the user environment.**

Major Topics Covered in the Course (Subject to Change) :

Week of	Topic	Comments: Lecture# (L#) Chapter# (C#)
1	Introduction to System Administration, System Requirement Analysis and Development, Type of Systems, Boot & Shutdown	L1, System Administration, C1, C2
2	File Systems, Virtual Machines, Containers	L2, L3, C5, C24, C25,
3	Disk Partitions & LVM, RAID	L4, C20
4	Access Control & Permissions, User Management, Storage, Virtual Box	L5, C3, C8, Lab 1
5	Software Installation-Packages, Virtual Box Installation -Ubuntu Desktop & Server	L6, C6, Lab2, Lab3
6	Networks Hardware	L7, C14
7	Networking TCP/IP, Test 1 Review	L8, C13
8	Test 1 (6:00–7:20), TCP/IP	L9 Test 1, C13
9	VMWare Installation (Lab 4, Lab 5, Lab6)	L10, Lab4, Lab5, Lab6
10	Network Services (DNS/DHCP), Network File System (NFS)	L11, C16, C21, C22
11	File Sharing, Web Hosting, Working with Network Configuration (Lab7)	L12, C17, C19, Lab7,
12	Automating Administrative Tasks, Cron Backups & Syslog, Working with Installed Software and System Configuration (Lab8, Lab9), Test 2 Review	L13, C23, C10, Lab8, Lab 9
13	Test 2 (6:00–7:20), Popular Services (SMTP), etc.	L14, Test 2, C18
14	Network Management & Debugging, Security (Firewalls),	L15, C28, C27
15	Reading Day/Self-Study (or accommodation for missing a prior week due to University holidays)	
16	Final Exam	

GRADING SCHEME

20% -- Quiz, Class Participation
50% - Homework
30% -- Tests

COURSE POLICIES

Attendance for this course and the primary textbook is mandatory. I may cover topics that are not in the book. It is in the students' best interest to attend all classes. It is the student's responsibility to contact other students for notes/announcements for the missed classes. If attendance becomes an issue, the instructor may include attendance-based assignments as a portion of the overall assignment grade. Course assignments will be posted on Canvas. It is the student's responsibility to keep track of due dates.

- All homework, projects, term papers, and experimental reports must be turned in through Canvas on the due date. DO NOT email your homework or project report to me unless an exception is granted for an assignment.
- All students will be trusted to pursue their academic careers with honesty and integrity. Academic dishonesty includes, but is not limited to, cheating on a test or other coursework, plagiarism, and unauthorized collaboration with other people. Students found guilty of dishonesty will be subject to penalties that may include suspension from the university.
- The instructor reserves the right to modify the course policies, the course contents, and the order in which the topics are covered.

Disability Accommodation:

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.