IT 341: Introduction to System Administration
Syllabus

Instructor: Torna Omar Soro, PhD
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Office: Temporary: S-3-124A

Office Hours: Monday and Wednesday 5:50 – 6:50 PM
Tuesday 5:30 - 6:30 PM
Or by appointment (email me)

Class Schedule: Tuesday & Thursday
7:00PM - 8:15 PM

Classroom: S-3-143

Course Website **TBA**
and Blackboard

Prerequisites: IT244

Course Description

This is an introduction to the process of choosing, installing, configuring and maintaining UNIX operating systems such as Linux. Topics include user management, file system management, security, networked file systems (NFS), networked information systems (NIS), domain name servers (DNS), mail systems and printers. Students will get practice writing shell scripts. Also, students are introduced to general system administration policy.

The goal of this course is to teach you how to setup and configure a Linux server and to learn some of the basic management principles involved in system administration.

Textbook

Required Materials:

- The first textbook is Ubuntu 18.04 LTS Server: Administration and Reference, by Richard Petersen (ISBN: 1719322279)
- The second textbook is The Practice of System and Network Administration (3rd edition), by Limoncelli, Hogan, and Chalup (ISBN: 0321919165) Recommended text

Lecturers and Reading

The first textbook: Ubuntu 18.04 LTS Server: Administration and Reference, by Richard Petersen (ISBN: 1719322279) (RP)

	Topic	**Reading**
1	Introductory Material	RP, Chapter 1-2
2	Class Setup	RP, Chapter 2-3
3	VMs/Installing Ubuntu	RP, Chapter 3-4
4	Reflecting on LAN Setup	RP, Chapter 16 (mainly DHCP for IPv4 section). RP, Chapter 18 (mainly TCP/IP Configuration Files, Network Interfaces and Routes, and Monitoring Your Network sections) The Netplan Website (The whole site, but especially Reference and FAQ)
5a	Tips for Working Effectively	Calculating Password Entropy (Check back regularly for new resources!)
5	NIS	RP, Chapter 5 (mainly *systemd*, *Managing Services*, and *Network Time Protocol* sections) RP, Chapter 11 (Section: 'Network Information Service: NIS')
	MIDTERM (October 24th)	Readings Lectures Projects
6	NFS	RP, Chapter 11 (can skip *Corosync*, *Pacemaker*, and *Red Hat Global File System* sections)
7	Private IP Addresses	RP, Chapter 17 (Firewalls)
8	DNS	RP, Chapter 15 (Domain Name System)
9	Key-Based Authentication	RP, Chapter 5 (Section: *The Secure Shell: OpenSSH*)
10	Using sed	**Link**: Sed - An Introduction and Tutorial
11	Using rdist	**Link:** Introduction to Rdist **Link:** What is rdist? How rdist works in Linux?
12	Using rsync	**Link**: Rsync (Remote Sync): 10 Practical Examples of Rsync

		Command in Linux **Link**: Rsync Command Tutorial With Examples **Link**: How to Backup Linux? 15 rsync Command Examples
13	Automated Backup	**Link**: Linux crontab command **Link**: crontab - Unix, Linux Command
14	More Automated Backup Materials	N/A
14	Linux and Project Tips	N/A
	Final Exam (TBA)	Readings Lectures Projects

Chapter Summaries

The second textbook: The Practice of System and Network Administration (3rd edition), by Limoncelli, Hogan, and Chalup (ISBN: 0321919165) (LHC) Recommended text:

Summary Completion: Be sure to complete the summaries indicated for your edition of the textbook; credit will not be given for the wrong chapters.

If you have the 3rd edition:		**If you have the 2nd edition:**	
LHC Chapter #	**Title**	**LHC Chapter #**	**Title**
1	Climbing Out of the Hole	1	What to Do When ...
2	The Small Batches Principle	2	Climb Out of the Hole
3	Pets and Cattle	3	Workstations
23	Network Architecture	4	Servers
24	Network Operations	5	Services
27	Customer Support	6	Data Centers
28	Handling an Incident Report	7	Networks
29	Debugging	8	Namespaces
30	Fixing Things Once	9	Documentation
31	Documentation	10	Disaster Recovery and Data Integrity
47	Ethics	11	Security Policy
48	Organizational Structures	12	Ethics
49	Perception and Visibility	13	Helpdesks
50	Time Management	14	Customer Care

51	Communication and Negotiation	15	Debugging
52	Being a Happy SA	16	Fixing Things Once
53	Hiring System Administrators	17	Change Management
54	Firing System Administrators	18	Server Upgrades
55	Operational Excellence	19	Service Conversions
56	Operational Assessments	20	Maintenance Windows

Midterm and Final

Standard midterm and final exams are multiple choice!

- Midterm (tentative: October 24th): Midterm Study Guide will be provided
- Final TBA: Final Study Guide will be provided

Grading Policy:

All homework and exams are subject to the University's Code of Conduct.
Plagiarism is not tolerated in any form.
Grades will be computed as follows:

- Lab Reports: 35%
- Assignments: 15%
- Chapter Summaries: 10%
- Midterm: 15%
- Final: 25%

Final grades will be assigned based on the following standard scale

A > 100 - 93 (the Registrar does not accept an A+ grade)
A - 92 - 90
B + 89 - 86
B 85 - 83
B - 82 - 80
C + 79 - 76
C 75 - 73
C - 72 - 70
D + 69 - 66
D 65 - 63
D - 62 - 60
F < 60

Accommodations for Students with Disabilities

Section 504 of the Americans with Disabilities Act of 1990 offers guidelines for curriculum modifications and adaptations for students with documented disabilities.

Students may obtain adaptation recommendations from the Ross Center for Disability Services.

Their web site is https://www.umb.edu/academics/vpass/disability.

A student must present these recommendations and discuss them with me within a reasonable period, preferably by the end of Add/Drop period.

Academic Honesty

The Academic Honesty section the Code of Student Conduct of the University reads as follows

It is the expressed policy of the University that every aspect of academic life not only formal coursework situation, but all relationships and interactions connected to the educational process shall be conducted in an absolutely and uncompromisingly honest manner. The University presupposes that any submission of work for academic credit indicates that the work is the student's own and is in compliance with University policies. In cases where academic dishonesty is discovered after completion of a course or degree program, sanctions may be imposed retroactively, up to and including revocation of the degree. Any student who reasonably believes another student has committed an act of academic dishonesty should inform the course instructor of the alleged violation.

Contacting Me

If you have questions about your status in the class, email me at torna.soro001@umb.edu