COURSE SYLLABUS
NET 360: Advanced Linux Administration

Course Description
This course teaches the skills necessary to set up a UNIX network capable of supporting DNS and Web servers, an anonymous FTP site, and print server. Students will install the operating system, applications, and learn how to upgrade the kernel, as well as configure the servers to satisfy enterprise requirements. Students will also write shell scripts to automate typical administrative tasks and learn how to configure connectivity with Novell and NT servers. The UNIX operating system used in this course will be Linux.

General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	40/0/80
Prerequisite(s)	COM259 and NET260
Co-requisites (s)	None
Course Developer(s)	Paul Bille, M.S.
Date Approved / Last Review	May 2014 / May 2014

Learning Outcomes
- Students will learn to use the Operating System to adapt applications to the hardware.
- Analyze instructions and if necessary perform research to resolve inconsistencies or omissions.
- Understand and utilize the modular architecture and dynamically linked modules.
- Understand the interaction and interdependence of the various parts of the operating system.
- Formulate and demonstrate a solution to a complex problem implementing the concept of abstraction.

Instructional Methods Employed in this Course
- Lecture and reading assignments
- Hands-on exercises
- Team environment
- Student presentations
- Practical application of theory and skills in authentic projects
- Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

Textbook

Sobell, Mark G. (2014). *A Practical Guide to Fedora and Red Hat Enterprise Linux (7th Edition).* New Jersey: Prentice Hall. ISBN-13: 978-0133477436

Other Materials

Negus, Christopher., Boronczyk, Timothy. (2009). *CentOS Bible (1st Edition).* New Jersey: Wiley. ISBN-13: 0470481653

Web Site Readings

wiki.centos.org/HowTos/Custom_Kernel
wiki.centos.org/HowTos/BuildingKernelModules
www.webmin.com
www.webalizer.org
www.Samba.org
www.apache.org
www.mysql.com
www.mysql.com
www.php.net

Table/Topics & Assignments

Types of Assignments:

Lecture -
Considered Lecture Hours
Classroom Discussion -
Considered Lecture Hours
In Class Critique -
Considered Lecture Hours
Delivering Oral Presentations -
Considered Lecture Hours
In Class (IC) Exercise -
Considered Lecture Hours
Reading -
Considered Homework, work done outside of class
WebClass lesson (non-online courses) -
Considered Homework, work done outside of class
Lab Work -
Considered Lab Hours

Quiz, Midterm or Final -
Considered Lecture Hours

Week 1						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 1A	Course Introduction	3	--	--	--	
IC EX 1A	Project 1, Install Project 2, Users & Groups	1	--	--	10	
HW 1A	Read Chapters 1-3 & 10, Install guide (204 pages) Evaluated by Midterm	--	--	20.4	--	Week 2
HW 1B		4	0	20.4	10	
Week 2						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 2A	Users & Groups, Networking, Configure a development platform, GCC, makefile and emacs, IDE	3	--	--	--	
IC EX 2A	Project 3, Network Interface Project 4, Download, install and configure GCC	1	--	--	10	End of Week 2
HW 2A	Read Chapters 4, 12 & 15 (116 pages) Evaluated by Midterm	--	--	11.6	--	Week 2
Total Week 2		4	0	11.6	10	
Week 3						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 3A	Compiling kernels, custom kernel and linkable modules	3	--	--	--	
IC EX 3A	Project 5, Compile the kernel	1	--	--	5	End of Week 3
HW 3A	Read Chapter 14 & Internet Reading (34 pages) Evaluated	--	--	3.4	--	Week 3

	by Midterm					
Total Week 3		4	0	3.4	5	
Week 4						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 4A	Networks, DHCP, hosts, DNS, Configure an authoritative DNS server	3	--	--	--	
IC EX 4A	Project 6, Configure the network interface, configure an authoritative DNS server	1	--	--	5	End of Week 4
HW 4A	Read Chapters 8 & 24 (91 pages) Evaluated by Midterm	--	--	9.1	--	Week 5
Total Week 4		4	0	9.1	5	
Week 5						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 5A	Install and Configure a web server	3	--	--	--	
Exam 5A	Midterm Exam	1	--	--	20	
HW 5B	Read Chapter 18-19, 26 & Internet reading (108 pages) Evaluated by Final	--	--	10.8	5	Week 6
Total Week 5		4	0	10.8	20	
Week 6						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 6A	Client server interaction, Application design and development	3	--	--	--	
IC EX 6A	Project 8, Design a network application Project 9, Develop HTML documents and forms	1	--	--	10	End of Week 6
HW 6A	Read Chapters 9, 27 & Internet reading (123 pages)	--	--	12.3	--	Week 7

	Evaluated by Final					
Total Week 6		4	0	12.3	10	
Week 7						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 7A	CGI-BIN, programming the Common Gateway Interface, Retrieve data from HTML forms	3	--	--	--	
IC EX 7A	Project 10, Write a CGI-BIN script	1	--	--	5	End of Week 7
HW 7A	Read Chapter 28-29 (53 pages) Evaluated by Final	--	--	5.3	--	Week 8
Total Week 7		4	0	5.3	5	
Week 8						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 8A	CGI-BIN, content vs. style, Composing an HTML response	3	--	--	--	
IC EX 8A	Project 11, Populate a forms template	1	--	--	5	End of Week 8
HW 8A	Read Chapters 21-23 (79 pages) Evaluated by Final	--	--	7.9	--	
Total Week 8		4	0	7.9	5	
Week 9						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 9A	System Logs, Intrusion Detection	3	--	--	--	
IC EX 9A	Project 12, Server Testing, Design test cases	1	--	--	5	End of Week 9
HW 9A	Read Chapter 20 (29 pages) Evaluated by Final	--	--	2.9	--	Week 10
Total Week 9		4	0	2.9	5	
Week 10						
		LEC	**LAB**	**HW**	**Point**	

Type	Topic/Description	Hours	Hours	Hours	Value	Due
LEC 10A	Course Review and Discussion	3	--	--	--	
EXAM 10A	Final Exam	1	--	--	20	
IC EX 10A	All projects must be complete by the end of class.	--	--	--	--	
Total Week 10		4	0	0	20	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Course Introduction	4	0	20.4
2	Users & Groups, Networking, Configure a development platform, GCC, makefile and emacs, IDE	4	0	11.6
3	Custom kernel and linkable modules	4	0	3.4
4	Networks, DHCP, hosts, DNS Configure an authoritative DNS server	4	0	9.1
5	Install a web server, Configure a web server, Midterm Exam	4	0	10.8
6	Client Server interaction, Application Design and Development	4	0	12.3
7	CGI-BIN, programming the Common Gateway Interface, Retrieve data from HTML forms	4	0	5.3
8	CGI-BIN, content vs. style, Compose an HTML response	4	0	7.9
9	System Logs, Intrusion Detection	4	0	2.9
10	Course Review and Discussions, Final Exam	4	0	0
Total		40	0	83.7

Table/Point Breakdown

Assignment Type	Possible Points	Percent of Grade
IC Ex. 1A	10	10%
IC Ex. 2A	10	10%
IC Ex. 3A	5	5%
IC Ex. 4A	5	5%
EXAM 5A, Midterm Exam	20	20%
IC Ex. 5A	5	5%
IC Ex. 6B	10	10%
IC Ex. 7A	5	5%
IC Ex. 8A	5	5%
IC Ex. 9A	5	5%
EXAM 10A, Final Exam	20	20%
Total	100	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal
AU = Audit	TR = Transfer Credit

WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.