

COURSE DESCRIPTION

Department and Course Number: CSCI 323

Course Title: Systems Programming

Current Catalog Description: Study of a contemporary operating system and its set of tools from the perspective of software professionals and system administrators. The course analyzes the system components and their interactions, the tool environment, and system administration issues such as configuration, installation, networking, security, and performance tuning.

Total Credits: 3 hours

Coordinator: P. Tobin Maginnis, Associate Professor of Computer and Information Science

Textbook: Tobin Maginnis. *Sair Linux and GNU Certification Level I, Installation and Configuration*, 2nd Edition., and *Sair Linux and GNU Certification Level I, System Administration*, both published by Wiley.

Other required materials: Study guides and miscellaneous class handouts.

References: <http://pix.cs.olemiss.edu/csci323/>

Course Goals: To provide juniors and seniors hands on experience with a contemporary operating system and the role of system administration.

Prerequisites by Topic:

1. Familiarity with general computer system concepts (CSCI 223).
2. Familiarity with a high-level language and data structures (CSCI 112)
3. Familiarity with scripting languages is a plus.

Major Topics Covered in the Course:

1. Theory of operation (6 hours)
2. Base system (7 hours)
3. Shells and commands (4 hours)
4. System services (12 hours)
5. Applications (7 hours)
6. Troubleshooting (4 hours)
7. Tests (5 hours)

Laboratory projects: One week per assignment.

1. Install 1 of 2 Linux distributions
2. Install 2 of 2 Linux distributions (cannot be the same distribution as Assignment 1)
3. Add a user account both using a script and manually
4. Backup a set of directories using the tar utility
5. Download and install a source and an rpm software package
6. Setup fstab to allow users to mount and read/write text files from a MS-DOS floppy
7. Add a new stanza to LILO
8. Load a new device driver module
9. Configure a network interface with a static IP address
10. Configure a PPP interface
11. Setup file sharing with SAMBA
12. Recompile the Linux kernel to use Pentium instructions

Estimate of ABET/CAC Category Content:

	CORE	ADVANCED		CORE	ADVANCED
Data Structures	_____	_____ 1 _____	Computer Organization and Architecture	_____	_____ 2 _____
Algorithms	_____	_____	Concepts of Programming Languages	_____	_____
Software Design	_____	_____		_____	_____

Oral and Written Communications:

Not a significant focus of this course.

Social and Ethical Issues:

Not a significant focus of this course.

Theoretical Content (Foundations):

Not a significant focus of this course.

Problem Analysis:

Not a significant focus of this course.

Solution Design:

Not a significant focus of this course.