

University of Arkansas – Fort Smith
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General Syllabus

CS 1063 Foundations of Operating Systems II

Credit Hours: 3

Lecture Hours: 3

Laboratory Hours: 0

Prerequisites: CS 1044 Foundations of Networking

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Introduction to the Linux operating system and services. User administration, server installation and configuration, task automation using shell scripting, file management, and shell utilities will be addressed.

II. Student Learning Outcomes

A. Subject Matter

Upon completion of this course, the student will be able to:

1. Explain the fundamental concepts of operating systems and their implementation in the Linux operating system.
2. Install, configure, and administer Linux workstations and servers.
3. Use the shell, shell utilities, and scripting functionality to administer and manage local and remote Linux systems.
4. Explain how daemons or servers are configured and loaded on the Linux system and demonstrate the ability to resolve any configuration problems.
5. Explain the Linux File System and the management of file access permissions.

B. University Learning Outcomes

This course enhances student abilities in the following area:

Analytical Skills

Critical Thinking Skills - Students will utilize analytical skills to identify a problem related to operating systems configuration, break it down into its component parts and develop, implement, and troubleshoot the solution.

III. Major Course Topics

- A. Linux utilities
- B. Access control
- C. Bash shell
- D. Shell scripting
- E. File and directory permissions
- F. User and group administration
- G. Virtualization(Create and configure virtual networks)
- H. Network configuration (IPv4, Bridging and Routing, NAT)
- I. System startup (Systemd and SystemV)
- J. Daemons and servers (DNS, HTTP, DHCP)