

# Linux System for Cybersecurity

## CYSE 270

### Course Description

This course introduces the basic operations in major Linux distributions (distros) for cybersecurity using both the graphical interface and the command-line interface. Students will learn about the basic installation and configuration, file systems management, shell scripts, and user authentication in Linux systems.

### Course Objectives

- Introduce fundamental concepts and practical knowledge of Linux operating systems, including common distributions used in cybersecurity, with emphasis on Kali Linux.
- Install, configure, and operate multiple Linux distributions in both local and remote environments.
- Understand and apply Linux file and directory ownership, permissions, and access control mechanisms.
- Develop a working knowledge of the Linux command line and shell scripting for system automation and security tasks.
- Perform essential system administration functions, including user and group management, network configuration, process monitoring, log analysis, and software/package management.
- Apply Linux-based security techniques and tools, including footprinting, firewall configuration, and introductory intrusion detection concepts.

### Exit Skills

Students should be able to:

- Perform essential system administration functions on Linux systems.
- Write and execute shell scripts to automate common Linux tasks.
- Apply appropriate security techniques to secure Linux systems.

## Course Outline (Tentative)

### Module 1: Introduction to Linux

- Linux distributions and key components
- Command-line fundamentals
- Accessing resources on cloud platforms (e.g., AWS – Amazon Web Services)

### Module 2: User and Group Accounts

- Managing user accounts
- Managing group accounts
- Developing and enforcing account security policies

### Module 3: File and Data Storage

- File and directory permissions
- Local storage management essentials

### Module 4: Automation

- Shell scripting fundamentals
- Common automation tasks

### Module 5: System Administration

- Process management and log administration
- Network configuration and management

### Module 6: Security Tasks

- Footprinting techniques
- Firewall configuration

**Note:** Course overview and module descriptions adapted from Old Dominion University (n.d.),

*Linux System for Cybersecurity, CYSE 270 syllabus materials.*