

Operating Systems

Level 3

Pathway: Networking Systems & Security

Course Description:

This course introduces the functions and capabilities of an operating system, including configuring and modifying the operating system environment.

Learning Outcomes:

1. Analyze and implement Operating System (OS)-level mechanisms and policies designed to protect systems against sophisticated security attacks.
2. Evaluate advanced persistent threats, including rootkit, malware, and deploy protection mechanisms designed to thwart security breaches.
3. Explore and recommend advanced kernel debugging techniques will be applied to understanding underlying protection mechanisms of malicious operating software.
4. Research and implement software mechanisms designed to protect the OS.
5. Deploy security techniques via virtual machines to implement security on OS environments.

Outline:

- I. Security issues associated with operating systems
- II. Rootkit, malware, and advanced security threats

- III. Kernel debugging techniques
- IV. Protection mechanisms for operating systems via virtual systems
- V. Software protection for OS
- VI. Security software techniques
- VII. Optimum security for specific OS environments
- VIII. 64 Bit Systems: Linux, Windows, and Mac OS