Common Course Syllabus

Course Number	AIST 3720
Course Name	Operating System Concepts and Administration
Description	An introduction to operating systems geared towards future administrators. Includes coverage of operating system roles, functions and services, hardware components, virtualization, and the installation, configuration, and administration of a secure operating system.
Learning Outcomes	Students completing this course should be able to: • Explain the core roles, functions, and services of secure operating systems. • Discuss the physical, logical, and virtualized components of computing hardware. • Install, configure, and patch one or more common operating systems (OS). • Configure and troubleshoot network connectivity on one or more OS. • Explain common access control mechanisms as applied to both files and services of an OS. • Secure access to files and services of an OS. • Compare common OS backup strategies. • Backup and restore all or portions of an OS. • Analyze system logs to audit OS security and troubleshoot OS performance. • Automate common OS administration tasks using a contemporary scripting language.
Knowledge Areas	• Roles, functions, and services (e.g., Kernel, Privileged & Non-Privileged States, Process & Threads, Memory, File Systems, etc.) • Hardware & Virtualization (Workstations & Servers, I/O Devices, Memory, Virtualization & Hypervisors) • Installation, configuration & patching of server operating systems • Network configuration (local firewall, port mapping, etc.) • Configuring & managing user accounts and password policies • Understanding, creating & maintaining access control mechanisms • Creating, maintaining, and securing file and directory structures • Backing up and restoring operating systems and hosted assets • Collecting and assessing system logs for security auditing and troubleshooting • Refining command line and scripting skills for system administration
Prerequisite(s)	AIST 2120 ≥ C **–AND–** CYBR 2600 ≥ C