

COP 4610 Computer Operating Systems

Credits: 3

Text book, title, author, and year: *Operating System Concepts 9th Edition*, by Silberschatz, Galvin, and Gagne, Wiley, 2013.

- a. **Supplemental materials:** none.

Specific course information

- a. **Catalog description:** An introduction to what makes up a digital computer operating systems, includes developing an understanding of interrupts, interrupt handling, processes, process management, file and device management, and other features of control programs. A team design project is required.
- b. **Prerequisites:** COP 3530 and CDA3331C
- c. **Required, elective, or selected elective:** required

Specific goals for the course

- a. **Specific outcomes of instruction:** By the end of the course students will be able to: (i) Understand fundamental concepts applied in modern operating systems, including process management, memory organization and management, and I/O management; (ii) Apply the design of collaborative processes and threads and their synchronization using semaphores; (iii) Understand the problem of deadlock and their solutions; (iv) Acquire knowledge of basic principles of I/O management;(v) Develop a simulation program for the evaluation of CPU schedulers

Brief list of topics to be covered:

- Functions and characteristics of operating system
- Process management -processes and threads
- Resource allocation and scheduling
- Process collaboration and synchronization
- Deadlocks and their prevention
- Memory organization and management
- Virtual memory organization
- Virtual memory management
- Input/ output management and disk scheduling
- Case studies