

CSCE 311 - Operating Systems

Credit Hours: 3 hours

Contact Hours: 3 lecture hours

Instructor: Dr. Rose

Required Textbooks: Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, *Operating System Concepts*, John Wiley & Sons, 2012.

Michael Kifer and Scott Smolka, *Introduction to Operating System Design and Implementation: The OSP 2 Approach*, Springer, 2007.

Bulletin Description: Operating system structure and function; process implementation, scheduling, and synchronization; memory management; security; naming protection; resource allocation; network file systems.

Prerequisites: CSCE 240, CSCE 210 or CSCE 212

Required Course in CE, CIS, and CS programs

Learning Outcomes: Students will be able to:

1. Describe the major components of an operating system and state their functions and purpose.
2. Implement and use algorithms for the management and programming of concurrent processes.
3. Implement and use algorithms for resource allocation and management in computer systems.
4. Explain the fundamental concepts and structures of computer networks

Student (Program) Outcomes addressed by course (Detailed mappings of these course outcomes to the Student Outcomes of the programs are in the detailed syllabus and the Assessment plan.)

Student Program Outcomes	SOs supported	SOs Moderately supported
Computer Engineering	a, b, c, i, k	e, h
Computer Information Systems	a, b, c, IS-j	g
Computer Science	a, b, c, j, CS-j, CS-k	g

Topics covered:

1. Hardware and architecture support for OS
2. Process description and Control
3. Concurrency
4. Scheduling
5. Memory Management
6. File Management
7. Distributed Systems and networks
8. Real-world examples of implementations