

CSCE 311: Operating Systems

1. Course number and name: CSCE 311: Operating Systems
2. Credit: 3-hrs; Contact: 3 lectures of 50 minutes each or 2 lectures of 75 minutes each per week
3. Instructor: Fall 2010: John Rose
Spring 2011: John Rose
4. Text book: Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, *Operating System Concepts*, 8th Edition John Wiley & Sons, 2009.
Michael Kifer and Scott Smolka, *Introduction to Operating System Design and Implementation: The OSP 2 Approach*, Springer, 2007
5. Specific course information
 - a. Catalog description: Operating system structure and function; process implementation, scheduling, and synchronization; memory management; security; naming protection; resource allocation; network file systems.
 - b. Prerequisites: CSCE 240, CSCE 210 or 212, MATH 374
 - c. Required in all curricula
6. Specific goals for the course
 - a. Specific outcomes of instruction:
 - Describe the major components of an operating system and state their functions and purpose.
 - Implement and use algorithms for the management and programming of concurrent processes.
 - Implement and use algorithms for resource allocation and management in computer systems.
 - Explain the fundamental concepts and structures of computer networks
 - b. Relation of course outcomes to Student Outcomes: CE: see page 2; CS & CIS: see page 3
7. Topics covered and approximate weight (14 weeks, 3 hours/week, 42 hours total)
 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

c.

Computer Engineering

Relation of Course Outcomes to EAC Student Outcomes*

Course Outcomes (CE)	Student Outcomes											
	(a) apply knowl edge of mathe matics , scienc e, and engine ering	(b) design and condu ct experi ments, ... interpr et data	(c) design a syste m, comp onent, or proces s to meet desire d needs ...	(d) functi on on multid iscipli nary teams	(e) identif y, formu late, and solve engine ering proble ms	(f) an unders tandin g of profes sional and ethical respon sibilit y	(g) comm unicat e effecti vely	(h) the broad educat ion to unders tand the impac t of engine ering soluti ons ...	(i) a recogn ition of the need for, and an ability to engag e in life- long learn ing	(j) a knowl edge of contem pora ry issues	(k) use the techni ques, skills, and moder n engine ering tools	(CE) demo strate knowl edge of discret e mathe matics [CE]
Criteria	a	b	c	d	e	f	g	h	i	j	k	CE
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 the management and programming of concurrent processes.												
4. Explain the fundamental concepts and structures of computer networks.												

* 3 = major contributor, 2 = moderate contributor, 1 = minor contributor; blank if not related

d.

Computer Science & Computer Information Systems

Relation of Course Outcomes to CAC Student Outcomes*

Course Outcomes (CS & CIS)	Student Outcomes											
	All									CS		CIS
	(a) apply knowledge of computing and mathematics appropriate to the discipline	(b) analyze a problem, and identify and define the computing requirements ...	(c) design, implement, and evaluate a computer-based system, ...	(d) function effectively on teams to accomplish a common goal	(e) An understanding of professional, ethical, legal, ... responsibilities	(f) communicate effectively with a range of audiences	(g) analyze the local and global impact of computing on ... society	(h) Recognition of the need for ... continuing professional development	(i) current technical skills, and tools necessary for computing practice	(j) apply mathematical foundations, algorithmic principles, and CS theory ...	(k) apply design and development principles	(l) An understanding of processes that support the information systems environment.
Criteria	a	b	c	d	e	f	g	h	i	j	k	j
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 the management and programming of concurrent processes.												
4. Explain the fundamental concepts and structures of computer networks.												

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