

SYLLABUS  
PART I  
EDISON STATE COMMUNITY COLLEGE  
CIS 211S OPERATING SYSTEM CONCEPTS  
3 CREDIT HOURS

**COURSE DESCRIPTION**

Study of operating systems concepts, organization, and functions including commands used in a working systems environment. Topics include single and multi-user systems, single and multi-tasking systems and graphical user interfaces. Operating systems for various platforms are explored. Lab fee.

**COURSE GOALS**

The student will:

Bloom's Level		Program Outcomes
1	1. Define the design and organization underlying any operating system.	4
2	2. Explain the major functions and purposes of computer operating systems.	4, 5
1	3. Describe the differences between command-oriented systems, system shells, and graphical user interfaces.	5
1	4. Examine the uses for various types of operating systems.	4
3	5. Use virtualization techniques to explore operating systems.	5, 7
3	6. Prepare and present an oral or written report on an operating system concept.	6, 7, 8

**CORE VALUES**

The Core Values are a set of principles that guide Edison State Community College in creating its educational programs and environment. They will be reflected in every aspect of the College. Students' educational experiences will incorporate the Core Values at all levels, so that a student who completes a degree program at Edison State Community College will not only have been introduced to each value, but will have had them reinforced and refined at every opportunity.

**TOPIC OUTLINE**

1. Operating System Software, Types of Operating Systems, and a Brief History of Operating Systems
2. Memory Management Systems and Allocation/Deallocation
3. Paging, Segmentation, Virtual Memory, and Cache Memory
4. Processor Scheduling (including Policies and Algorithms), Process States, and Interrupts
5. Process Deadlock, Livelock, and Starvation
6. Concurrent Processing, Multiprocessing Configurations, Process Cooperation, and Threads
7. I/O Requests, Sequential Access Storage, Direct Access Storage, Components of the I/O Subsystem, and RAID Levels
8. File Management, Organization within Files, Physical Storage Allocation of Files, Methods of Accessing Files, Access Control, and Data Compression
9. Network Operating Systems, Distributed Operating Systems, Network Topologies, Network Types, Network Security, and Transport Protocol Standards
10. Operating System Security, System Survivability, Backup and Recovery, System Protection, and Password Management
11. Evaluation of Operating Systems, Cooperation Among Operating System Components, Measuring Operating System Performance, Managing Patches, and System Monitoring
12. UNIX Operating Systems, Scripting, Redirection, Pipes, and Filters
13. Linux Operating Systems
14. Windows Operating Systems, DOS, the Registry, Device Manager, Microsoft Management Console and local snap-ins, and Task Manager
15. Android Operating Systems