

**SYLLABUS
SUGGESTIONS
OPERATING SYSTEMS:
INTERNALS AND DESIGN
PRINCIPLES
SEVENTH EDITION**

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The following table shows the syllabus chapter schedule for courses taught at six different schools using *Operating Systems: Internals and Design Principles*. Table entries show the chapters covered each week.

Week	A	B	C	D	E	F
1	1	1, 2	1	1, 2	1, 2	1, 2, 3, 4
2	2	3	UNIX shell	3	3	5, 6, 9
3	3	4	2	4	4	9, 10
4	4	5	3	4	5	13, 16, 18
5	5	5	4	5	6	7, 8
6	6	5	5	6	7	11, 12
7	7	5	6	7, 8	8	14, 15, 16
8	8	5, 6	7	8	9, 10	
9	9	6	8	8	11, 12	
10	10	7, 8	17	9	14, 15	
11	11	8	16, 9	9, 10	16	
12	12	11, 9	9, 10	11, 12, 13		
13	14	10, 12	11	14		
14	15	16	12	15		
15	15-16	18	14-15			

Chapter Key:

- | | |
|-----------------------|---|
| 1 - Computer System | 10 - Multiprocessor/Real-Time |
| 2 - OS | 11 - I/O and Disk Scheduling |
| 3 - Process | 12 - File |
| 4 - Threads | 13 - Embedded OS |
| 5 - Mutual Exclusion | 14 - Security Threats |
| 6 - Deadlock | 15 - Security Techniques |
| 7 - Memory Management | 16 - Dist. Processing, Client/Server, Cluster |
| 8 - Virtual Memory | 17 - Network Protocols |
| 9 - Scheduling | 18 - Distributed Process Management |

The syllabi generally follow the chapter sequence in the book, but there are some variations that are worth considering. Also note that courses E and F are for shorter periods and necessarily compress the amount of material to be covered.

Notes on the chapters, with suggestions on the relative importance of sections in each chapter.

Chapter 1 Computer System Overview

If the students have had a course in computer organization and architecture, then most of this chapter can be skipped or assigned as background/review reading. Appendix 1A should be covered because of its importance later on.

Chapter 2 Operating System Overview

Sections 2.5, 2.6. and 2.11 may easily be skipped for time constraints. Sections 2.7 through 2.10 deal with specific operating systems. You may choose to include none or only one of these examples; this is also true of later chapters.

Chapter 3 Process Description and Control

Section 3.6, on security issues, may be easily omitted. This is true of security sections in subsequent chapters.

Chapter 4 Threads

Sections 4.1 through 4.3 should be covered.

Chapter 5 Concurrency: Mutual Exclusion and Synchronization

You may choose to omit sections 5.4 (monitors) and 5.5 (message passing).

Chapter 6 Concurrency: Deadlock and Starvation

The most important sections are 6.1 and 6.2. You may consider skipping 6.3 through 6.6.

Chapter 7 Memory Management

Paging is the important concept introduced in this chapter, and you may consider skipping Section 7.4, on segmentation.

Chapter 8 Virtual Memory

The material in Sections 8.1 and 8.2 is important and should be covered. As before, you may choose to use only some or none of the OS example systems.

Chapter 9 Uniprocessor Scheduling

The material in Sections 9.1 and 9.2 is important and should be covered.

Chapter 10 Multiprocessor and Real-Time Scheduling

You may want to skip this chapter, or assign it as supplemental reading.

Chapter 11 I/O Management and Disk Scheduling

If students have already covered the material in Sections 10.1 and 10.2, these can be skipped. To save time, you can consider leaving out one or more of: Sections 10.5 (Disk Scheduling), 11.6 (RAID), and 11.7 (Disk Cache).

Chapter 12 File Management

Depending on your interest, you may want to skip this chapter or cover it lightly. If you want to partially cover the chapter, Sections 12.1 (Overview), 12.2 (File Organization and Access), and 12.4 (File Directories) are the most important.

Chapter 13 Embedded Systems

This is an optional chapter.

Chapter 14 Computer Security Threats

For a longer course, or an advanced course, this chapter should be included.

Chapter 15 Computer Security Techniques

For a longer course, or an advanced course, this chapter should be included.

Chapter 16 Distributed Processing, Client/Server, and Clusters

For a longer course, or an advanced course, this chapter is recommended.

Chapter 17 Network Protocols

This is an optional chapter for a longer or advanced course.

Chapter 18 Distributed Process Management

This is an optional chapter for a longer or advanced course.