

This course is a one semester composition that focuses on both the theoretical and practical issues underlying operating systems design and implementation. It is assumed that each student has a thorough working knowledge of C/C++, and has taken and has passed CS2604: Data Structures and File Management, with the appropriate grade. For CS majors and minors that "appropriate grade" is a "C" or better. For CpE Majors who are not CS minors that "appropriate grade" is a "C-" or better. You must also have successfully completed ECE2504 (Intro to Computer Organization). Remaining in this class without having taken the above noted classes and passing them with appropriately stated grade *is an honor code violation*.

The topics discussed in this course will concentrate on elements crucial to operating system activities, including (but not limited to) process scheduling, deadlock avoidance, memory management and synchronization of concurrent activities.

Grading policy:

Your grade will be determined as follows:

- (1) Programming Assignments (45%) with the following *approximate* distribution

Program 1	5%
Program 2	15%
Program 3	15%
Program 4	10%
- (2) Pop Quizzes and Homework (1 HW == 2 PQ) 15%
- (3) Midterm Exam (curved to highest grade) 20%
- (4) Final Exam (curved to highest grade) 20%

Program Grading:

Internal Documentation, Program Structure, and Efficient Algorithms	25%
Correct Results	75%

A program that is not complete will be graded on the first three items and the maximum possible grade attainable will be 25%. It is not the grader's job to figure out "how close" the project is to being correct - either it works correctly or it doesn't!.

I DO NOT ACCEPT LATE ASSIGNMENTS!

Grades are assigned on a 10 point scale (e.g. 90-100 is in the "A" range); I do give "-" and "+" grades; I do NOT curve the final grade.

Ethics: VPI & SU Honor Code is applicable.

Course Text:

Operating Systems: Operating Systems: Internals and Design Principles (5th Edition)
William Stallings

Tentative Lecture Schedule:

Ch 1	Computer Systems Overview	Lecture	1-2
Ch 2	Operating Systems Overview	Lectures	3-4
Ch 3	Process Description and Control	Lecture	5-7
Ch 4	Threads, SMP and Microkernels	Lecture	8-9
Ch 5	Concurrency: Mutual Exclusion and Synchronization	Lectures	10-12
Ch 6	Concurrency: Deadlock and Starvation	Lectures	13-15
Ch 7	Memory Management	Lectures	16-18
Ch 8	Virtual Memory	Lecture	19-21
Ch 9	Uniprocessor Scheduling	Lectures	22-24
Ch 12	File Management	Lectures	25-27
Ch 11	I/O Mgmt and Disk Scheduling	Lectures	28-30

Class Website: <http://courses.cs.vt.edu/~cs3204/>