CMPT 424 | # Operating Systems | Fall 2024
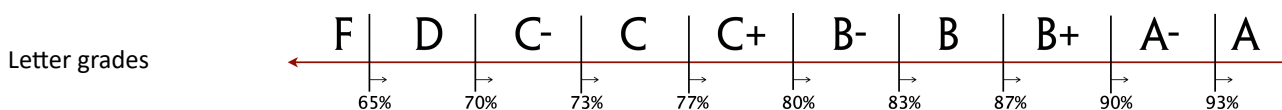
Background

When and where	Class Mondays 8am to 10:45AM in LT 17 · Labs online or Friday mornings in my office.
Required Text	*Operating Systems Concepts* eighth edition or later, by Silberschatz, Galvin, and Gagne ISBN 978-0470128725
Web site	http://www.labouseur.com/courses/os
Instructor	Alan G. Labouseur Alan.Labouseur@Marist.edu
	Hancock 3**007** 845-575-3832 *Marist*
	(Office hours are posted.) 845-440-1102 *home office*

Grading

Letter grades

F	D	C-	C	C+	B-	B	B+	A-	A
	65%	70%	73%	77%	80%	83%	87%	90%	93%

You can earn up to 1000 points, broken down as follows:

Projects and Labs	35.0%	350 points - 50, 50, 100, 150	[1, 2]
Mid-term Exam	30.0%	300 points - one-page study sheet	[5]
Final Exam	30.0%	300 points - one-page study sheet	[5]
Attendance and Participation	2.5%	25 points for quality and quantity	[1]
Laziness and Whining	2.5%	25 points for not (lazy or whining)	[1]

Themes, Objectives, and Assessment

Assessment methods include assignments, quizzes, exams, discussions, presentations, peer review, and projects.

[References] refer to Department of Computing Technology Goals available at http://www.labouseur.com/courses/goals.pdf

In this course, I hope that you will . . .
- become an excellent software developer and craftsman. [1,2]
- develop and demonstrate expertise and philosophical appreciation for the design and implementation of modern, event-driven, super cool Operating Systems. [2]
- survive the ordeal of actually writing one, and thrive as a result. [1, 2]
- embrace the opportunity to develop a complex system over the course of the semester where you have to live with you prior mistakes and shortcuts or go back and fix them; either teaching a valuable lesson. [1, 2]
- learn that developing the software is only half the battle, debugging and testing are critical skills for a talented professional, and skills that will be stressed. [1, 2]
- enhance your continuing education skills. Capable problem solvers never stop learning. You will get practice in finding answers for yourself. Plus, preparation and presentation of the final project, as well as participation in class discussions, and assignments requires at least a little research, so there's that too. [1,2]

Finally, this class and its project are popular interview topics. I want you to be so awesome that the company hires you on the spot and sends you home with a Brinks truck full of cash and unreleased video games, including *Portal 3* and a VR version of *The Talos Principle*.

— Schedule

#	Week	Work	Chapters	Topics
0	26-Aug	Lab 0	1	Administrivia and our plan · Studying Operating Systems · Virtual Machines and Us Discussion of TypeScript: What are we in for? · Initial project code walkthrough
1	2-Sep	Lab 1	—	*No class meeting — Labor Day* (Lab 1 is still due. Post it in GitHub.)
2	9-Sep	Lab 2 *i*Project 1	1, 2 13.2	Interrupts · I/O · System Boot · OS ComponentsOS services · System calls System programs · User programs · Concepts of protection
3	16-Sep	Lab 3	3, 4	Thoughts on *i*Project 1 · Processes · Threads
4	23-Sep	Lab 4	8 5	Main Memory, part one · 6502*a* op codes · CPU Scheduling
5	30-Sep	Lab 5	5	More CPU Scheduling, which I love
6	7-Oct	*i*Project 2	—	Review for the Mid-term exam
7	14-Oct	—	—	**Mid-term Exam** in class at 8ᴀᴍ in HC 2023 One-page study sheet permitted. Some restrictions apply. in HC 2023
8	21-Oct	—	—	*No class meeting — Fall Break*
9	28-Oct	Lab 6	—	Thoughts on *i*Project 2 and the Mid-term exam · Describe, demo, explain *i*Project 3. See diagram. · Point out that it's too late to drop; we're in this together till the very end.
A	4-Nov	Lab 7	8	Main Memory, part two
B	11-Nov	*i*Project 3	12, 10, 11	File system concepts, implementation, and low-level details
C	18-Nov	Lab 8	12, 10, 11	Thoughts on *i*Project 3 HTML5 storage · Virtual hardware implementation for Final Project
D	25-Nov	Lab 9	6, 7	Synchronization · Transactions · Deadlock
E	2-Dec	Lab A	9	Virtual Memory · Review for Final Exam
F	9-Dec	—	—	**Final Exam** in class at 8ᴀᴍ in HC 2023 One-page study sheet permitted. Some restrictions apply.
G	12-Dec	*i*Project 4	—	Final Meeting in class at 10:30ᴀᴍ — Last chance to ask questions and get pointers about the final project. Your final commits are due on GitHub before 12:30ᴘᴍ today.