

CS 450 OPERATING SYSTEMS

COURSE OVERVIEW

Spring 2011

UPDATED Jan. 14, 2011

(Sect. 001, CRN **10966**, 3 credits)

CLASS: Mon., Wed., Fri., 3:00 - 3:50 PM, 251 ESB

INSTRUCTOR: [Jim Mooney](#), Assoc. Prof. of Computer Science
941 ESB, (304) 293-9128
jdm@csee.wvu.edu

OFFICE HOURS: Wed., Fri. ,10-11 AM; Mon., Wed., 2-3 PM.

I will usually be available during these hours -- no guarantees. I can arrange to be available other times as well. For best results, make an appointment. These hours are subject to change; For the latest information on my schedule see <http://www.csee.wvu.edu/~jdm/misc/schedule.html>.

LABORATORY: The required computing environment for this project consists of a PC running the Windows operating system and an ANSI C compiler. Later assignments will require two PCs connected together. More detailed requirements will be provided.

This course does not include closed lab sessions. You are encouraged to use your own computers where possible. Information on suitable computing systems available in LCSEE labs will be provided as needed.

LAB INSTRUCTOR: Adam Brady. Office: 1011 ESB. Office Hours: Wed., Thurs., 2-3:30 PM; Fri. 2-3 PM or by appt. Email: abrady1@mix.wvu.edu.
Course website: <http://csee.wvu.edu/~abrady1/cs450>.

TEXTS: The text and project notes listed below will be made available via the web. These are copyrighted materials, and access will be password protected. This material may be undergoing revision throughout the semester. Please do not rely on earlier versions of chapters or project modules not yet assigned.

1. CS 450 TEXT, selected chapters from A PRACTICAL APPROACH TO OPERATING SYSTEMS, 2nd ed., by J.D. Mooney and M.G. Lane.

2. CS 450 PROJECT MANUAL, by J.D. Mooney and M.G. Lane.

PREREQUISITE: CS 350 or equivalent. Students are expected to have an introductory knowledge of C programming (**not just C++**) and use of the Unix environment. **Prerequisites will be enforced. Students who are not comfortable writing C programs using pointers and multiple source files may have difficulty with course projects.**

STUDENT LEARNING OUTCOMES: After completing this course, students should be able to:

1. Demonstrate a working knowledge of basic OS concepts, especially process management, I/O management, and the user interface
2. Briefly discuss several advanced OS concepts, including file systems and virtual memory
3. Explain highlights of OS history and its relation to present-day OSs
4. Carry out the development of a significant OS implementation project using the C language
5. Work effectively as a member of a software development project group

THE MPX PROJECT: A very important component of this course is the MPX project. In this project, groups of (about) 4 students will develop a primitive multitasking operating system kernel, over the course of the semester, in several distinct steps. Most components of the project grade are assigned on a group basis -- all members receive the same grade. As is usual in the real world of software development, you will be assigned to groups by your manager (instructor). Requests for specific groupings will be considered, but not guaranteed.

If you substantially fail to fulfill your responsibilities in your project group, you will fail the course!

This project is intended both to strengthen your understanding of OS concepts, and to provide an experience in developing *system* software as part of a realistic *project group*. Since an operating system must interact directly with hardware resources, you will also increase your familiarity with basic hardware structures such as interrupts and I/O devices. The course will also develop your proficiency in the C language, commonly used in systems programming.

One class per week -- normally the Friday class -- will be devoted to the MPX Project.

EXAMS: There will be two one-hour in-class exams during the semester. There will be no makeup exams. If an exam is missed due to illness or emergency, your grade will be based on the remaining exam. There is no final exam in this

course.

A grade of I (incomplete) may be given **only** in cases of **bonafide personal emergency**. You are required to sign a contract explaining the nature of the emergency and agreeing to complete all necessary work within 60 days.

Recent previous exams, with answer keys, will be made available on the course web pages. Please bear in mind that the detailed course content and order of presentation varies each year. The field is evolving, and viewpoints may change. There is *no guarantee* that future exams will cover the same material or use the same questions, or even that the same questions should always have the same answers!

GRADING: Grades for the course will be based on the point assignments given below (a detailed breakdown of the project grade will be provided later). At the end of the semester, letter grades will be assigned based on the final average. The tentative scale is also shown. This scale may be lowered at the instructor's discretion, but not by much.

PERCENTAGES			LETTER GRADES	
Exam 1	30%		92.0 - 100.0	A
Exam 2	30%		82.0 - 91.9	B
MPX Project	40%		72.0 - 81.9	C
			60.0 - 71.9	D
			below 60.0	F

Specific grading policies for the components of the MPX Project will be provided by your lab instructor.

Plus or minus may be added to your letter grade at the instructor's discretion. This does not affect your GPA in any way, and will not be reconsidered.

If your final average is within **one percentage point** of the next **full letter grade**, you will be entitled to a review of your exams and oral grade on request. Otherwise, grades will only be reconsidered if you present **written evidence** of a **bonafide error** in grading.

MISCELLANEOUS: Attendance will not normally be checked, but regular attendance is expected. Up to 5 points may be deducted from your course grade if you are chronically absent. You are responsible for all class notes, announcements, assignments, etc. In borderline grading cases, attendance and class participation will be considered.

You are expected to abide by WVU principles of academic honesty. All work on

exams must be completely your own. Project work must be the original work of **your group**, not borrowed from other groups in this class or previous classes.

This course is intended to be conducted in accord with WVU policies ensuring equal access and equal opportunity. If you have any special needs or problems, please discuss them with your instructor.

West Virginia is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and nondiscrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class. Please advise me and make appropriate arrangement with Disability Services (293-6700).

URL for this page: <http://www.csee.wvu.edu/~jdm/classes/cs450/syllabus/2011-01/overview.html>

CS 450 main page: <http://www.csee.wvu.edu/~jdm/classes/cs450>

Jim Mooney's Home Page: <http://www.csee.wvu.edu/~jdm>