Syllabus
CS 3204: Operating Systems
Spring, 2001
CRN: 11371

`http://courses.cs.vt.edu/~cs3204/spring2001/cstruble`

Instructor: Dr. Craig A. Struble

Office: McBryde 521
Office Hours: 9:00-10:30 a.m. MWF
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GTA: Surya Kodukula

Office: McBryde 133
Office Hours: 4:00–6:00 p.m. W, 10:00 a.m. – 1:00 p.m. Th
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Class Meets: 2:30–3:45 p.m. MW, Randolph 216

Final Exam: 4:25–6:25 p.m., Monday, May 7, 2001

Prerequisites

- Passed *ECPE 2504 Introduction to Computer Engineering*
- CS majors and minors passed *CS 2604 Data Structures* $\geq$ C
- ECPE majors passed *CS 2604 Data Structures* $\geq$ C-

There will be **NO** exceptions.

Description

This course covers both theoretical and practical issues underlying operating system design and implementation. Lectures focus primarily on theoretical and conceptual aspects of operating systems. Programming projects focus on the application of concepts and implementation details.

Textbook

Required

Nutt, Gary, *Operating Systems: A Modern Perspective*, Addison Wesley Longman, Inc., 2000, ISBN 0-201-61251-8

References

Additional references will be made available on the course web site.

Grading

Grading for this class will be on a 1000 point scale. The breakdown of the points is as follows:

Homework	250 points
Programming Assignment 1	100 points
Programming Assignment 2	100 points
Programming Assignment 3	100 points
Programming Assignment 4	100 points
Programming Assignment 5	100 points
Midterm	100 points
Final Exam	150 points

There is no formal curve given for any single project or test. The final grades will be determined based on your relative performance in the class. I do guarantee that anyone getting 900 points or higher receives at least an A-, 800 points at least a B-, 700 points at least a C-, etc.

Homework

Homework assignments will be given out throughout the course of the semester. Homework may include very short programming assignments, short answer questions, and lab exercises. Homework assignments are due **in class** one week from their handout date. No late assignments will be accepted.

Quizzes

In addition, pop quizzes based on the material in the book may be given during any class. Quizzes are worth up to 10 bonus points, depending on the correctness of your answer. There will be no make up quizzes for any reason.

Programming Assignments

There are five programming assignments in this course. Programs are graded on functionality, style, and documentation. Grading guidelines for each programming assignment will be posted before the due date. Documentation includes appropriate **README** files for building and executing your assignment as well as in code documentation. Design documentation may also be required for some assignments.

Assignments must be turned in on the due date and time given. Assignments **MAY NOT** be turned in late for any reason. Be sure to make frequent backups, use a source code control system such as CVS, and start early on the assignments. Hard drive crashes, power outages, and lab closings are not valid excuses for late assignments.

Further information regarding assignment submissions will be available with each indiviual assignment. The submission instructions and format must be followed to receive any credit for the program. **Failure to follow submission instructions and format will result in a grade of 0 for the assignment.**

Programming Environment

All programming assignments must be implemented using `gcc/g++` under Linux. This environment will also be used for several homework assignments. Assignments are expected to compile and execute on the Linux machines in the Computer Science undergraduate lab, which run RedHat 6.2. You are required to have a CS undergraduate lab account. See `http://www.cslab.vt.edu` for details on obtaining an account.

At least one assignment will require modifying the source code of the operating system. To complete this assignment, you will need *root* access to the operating system. Since you cannot have root access in the CS undergraduate lab, you will be required to install Linux on your personal machine. It is recommended that you do this as early in the semester as possible to identify any potential difficulties with this process.

NOTE: The GTA and instructor will be using the RedHat 6.2 Linux distribution for all assignments, and we will be able to answer environment specific questions only for that platform. You are on your own if you choose a different platform.

Tests

There will be one midterm and one final examination. These tests may be of any format. The tests cover material presented in class as well as in the textbook. No make up tests will be given unless the instructor is notified at least 24 hours in advance of the original test date and a valid excuse is given to warrant a make-up test. If you miss a test because of a sudden illness or other sudden situation, then a note from the Dean's office (usually the Dean of Students in your college) is required before taking a make-up test.

Honor Code

The VPI & SU honor code is in effect for this course. You may receive help only from the instructor, GTAs assigned to this course, and ACM or UPE tutors. Students may also discuss assignments with classmates in a general way, i.e., discussing the *nature* of the assignment. However, sharing source code, pseudo-code, or homework solutions is strictly prohibited. In addition, the CS Department's "Policy on koofers, old programs, cheating, and computer use"[1] also applies to this course. Additional University, Departmental, and legal policies may also apply to this course; see the home page for details.

Note

If any student needs special accommodations because of a documented disability or cultural practices, please contact the instructor during the first week of classes.

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[1]`http://ei.cs.vt.edu/~dept/koofers.html`

Course Schedule

Chapter	Topic
1	Introduction
2	Using the Operating System
3	Operating System Organization
4	Computer Organization
6	Process Management
7	Scheduling
8	Basic Synchronization Principles
10	Deadlock
11	Memory Management
12	Virtual Memory
9	High-Level Synchronization
13	File Management
5	Device Management

Note, this schedule is subject to change at the instructor's discretion.