COSC 4321/5421 – Operating Systems Design

Course Information

September 9, 1997

Instructor: Tim Brecht (brecht@cs.yorku.ca)

Office: CCB 220 (Chemistry and Computer Building)

Office Hours: Tuesday 1:30–2:30 pm, Thursday 4:00–5:00 pm

Class Times and Location: Tuesday and Thursday 2:30–4:00 pm

Course Home Page: http://www.cs.yorku.ca/Courses/4321

TA: There is no TA.

Course Description: The purpose of this course is to teach the design of operating systems.

Course Prerequisites: COSC 3321, good C programming, testing, and debugging skills, and motivation to learn some C++.

Grading: Grades will be (roughly) computed as follows:
COSC 4321 Project 65%, Final exam: 35%.
COSC 5421 Project 65%, Final paper: 35%.
NOTE: you must get a passing grade on the final exam or paper to pass this course.

Final: The exam will be closed book and will cover material presented in lectures, the text, required readings, and the topics covered in the assignments.

Project: The project in this course is to build an operating system for a simulated MIPS-style workstation. The project consists of five phases: thread management, multiprogramming, virtual memory, file systems, and distributed systems (there won't be time to cover the distributed systems portion). Further details about the project will be covered in class and in handouts.

Required Reading:

1) The course reader.
2) The Nachos source code and programming documentation.

Both should be made available at the Beta Copy Center in York Lanes (maybe aboutl 15.00 each)

Course Text:

There is no text book that is required. That is, I'm not going to be going through each chapter or following the topics listed in any text. However, there are a number of texts that you should uses as references.

Background Reading: One of:

1) UNIX Internals: The New Frontiers, Uresh Vahalia, Prentice Hall, 1996.
2) Operating Systems Concepts, 4th Edition, Silbershatz and Galvin, Addison-Wesley, 1994.
3) Concurrent Systems: An Integrated Approach to Operating Systems, Databases, and Distributed Systems, Addison-Wesley, 1992.
4) Modern Operating Systems, Tanenbaum, Prentice Hall, 1992. Preferably Silbershatz and Galvin 4th Edition.

You may find it convenient to have a copy of "The C++ Programming Language" by Stroustrup and "The MIPS RISC Architecture" by Kane, but they are not required. Although the programming assignments will be in C++, you will be given a handout that describes what you need to know about C++. These and other REALLY useful books are on reserve in the library. Students in past years have found these to be EXTREMELY helpful.

Tentative Assignment Due Dates and weights:

1) Threads / Locks (5%) – Tuesday, September 23, 2:30 pm
2) Multiprogramming (20%) – Tuesday, October 21, 2:30 pm
3) Virtual Memory (20%) – Tuesday, November 11, 2:30 pm
4) File System (20%) – Tuesday, December 2, 2:30 pm