CPSC 410 OPERATING SYSTEMS

Instructor: Keith Perkins
Office Hours: Luter Hall 201-D
             M,W,F 2-3pm
             T,Th 10-11am
E-mail: keith.perkins@cnu.edu
Phone: 594-8425

Description

The goal of this course is to introduce operating systems concepts, such as I/O processing, interrupt structure and multiprocessing-multiprogramming, job and resource management, batch and interactive processing, threads (coordination & deadlock), computer networking through teleprocessing and system performance evaluation.

Objectives

The essential objectives of this course are to develop specific skills, competencies and points of view needed by professionals in the field, and gaining factual knowledge, such as terminology, classifications and trends. Other important objectives are learning to apply course material and solving problems, and learning principles, generalizations or theories.

Notes and Assignments

Course material will come from lecture notes, scholar, and the web.

Prerequisites

CPSC 327 and CPEN 214

Required Text

Operating Systems: Three Easy Pieces, Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau
http://pages.cs.wisc.edu/~remzi/OSTEP/
This is a free online textbook, you may also buy a hardcopy at the above website

Compiler and Integrated Development Environments (IDE)

This course will use GNU GCC and Eclipse CDT and
GNU C++ compiler 7.4.0

Operating System

This course will use linux (specifically Ubuntu LTS 18.04).

Projects

There will be five projects assigned this semester. They are not equally weighed (See below) Due dates will be clearly noted and observed. Projects turned in up to 1 week late will be penalized 50%. Projects later than 1 week will not be accepted.

Project 1 - 100 points - Read in Process List
Project 2 - 150 points – Process switching algorithm
Project 3 - 150 points – Process switching simulation
Project 4 - 150 points – Multithreaded 1

Project 5 - 200 points – Multithreaded 2

Grading

Grades will be based on programming assignments, 1 midterm exam during the semester and one final exam. I will not give make-up exams or accept any late projects except in cases of documented illness or valid justification.

A final grade will be calculated using the weights below:
Projects   30%
Midterm 1   20%
Midterm 2   20%
Final Exam   30%

Poin ts	100-93	93-90	90-87	87-83	83-80	80-77	77-73	73-70	70-60	< 60
Grad e	A (4.0)	A- (3.7)	B+ (3.3)	B (3.0)	B- (2.7)	C+ (2.3)	C (2.0)	C- (1.7)	D (1.0)	F (0.0)

Topics   A tentative list of topics is given below.

TOPICS
• C++ introduction
• Computer System & Operating System Overview
• Process Description & Control
• Process scheduling
• Memory Management
• Threads & Concurrency (Mutual Exclusion, Coordination & Deadlock)
• I/O & File Management

Disabilities:
In order for a student to receive an accommodation for a disability, that disability must be on record in the Dean of Students' Office, 3rd Floor, David Student Union (DSU). If you believe that you have a disability, please contact Dr. Kevin Hughes, Dean of Students (594-7160) to discuss your needs. Dean Hughes will provide you with the necessary doc-umentation to give to your professors.

Students with documented disabilities are required to notify the instructor no later than the first day on which they require an accommodation (the first day of class is recom-mended), in private, if accommodation is needed. The instructor will provide students with disabilities with all reasonable accommodations, but students are not exempted from fulfilling the normal requirements of the course. Work completed before the student notifies the instructor of his/her disability may be counted toward the final grade at the sole discretion of the instructor.

Success:
I want you to succeed in this course and at Christopher Newport. I encourage you to come see me during office hours or to schedule an appointment to discuss course con-tent or to answer questions you have. If I become concerned about your course perfor-mance, attendance, engagement, or well-being, I will speak with you first. I also may sub-mit a referral through our Captains Care Program. The referral will be received by the Center for Academic Success as well as other departments when appropriate (Counseling Services, Office of Student Engagement). If you are an athlete, the Athletic Academic Support Coordinator will be notified. Someone will contact you to help determine what

will help you succeed. Please remember that this is a means for me to support you and help foster your success at Christopher Newport.

Academic Support:
The Center for Academic Success offers free tutoring assistance for Christopher Newport students in several academic areas. Staff in the center offer individual assistance and/or workshops on various study strategies to help you perform your best in your courses. The center also houses the Alice F. Randall Writing Center. Writing consultants can help you at any stage of the writing process, from invention, to development of ideas, to polishing a final draft. The Center is not a proofreading service, but consultants can help you to recognize and find grammar and punctuation errors in your work as well as provide assistance with global tasks. Go as early in the writing process as you can, and go often!

You may drop by the Center for Academic Success to request a tutor, meet with a writing consultant, pick up a schedule of workshops, or make an appointment to talk one-on-one with a University Fellow for Student Success. The Center is located in Newport Hall, first floor, room 123.