



**Department of Physics,
Computer Science & Engineering**

CPSC 410 – Operating Systems I

Introduction

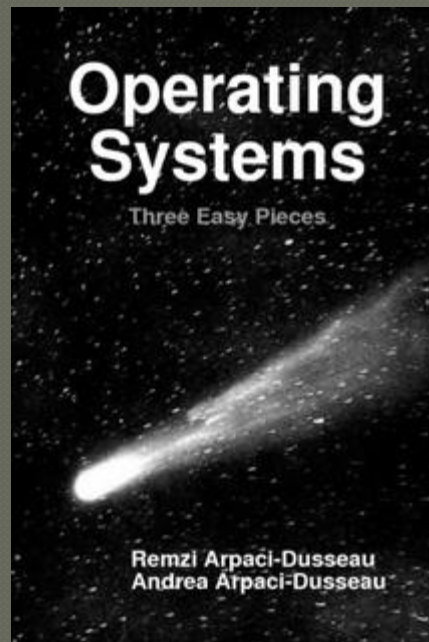
Keith Perkins

Admin: Your Background

- Some high level programming language
- Prerequisites CPEN 214, CPSC 327 (C++)

Admin: Text

- ◉ Free online text (Can also get a hardcopy)
- ◉ <http://pages.cs.wisc.edu/~remzi/OSTEP/>



Admin: Text

◉ Three sections

- Virtualization
 - Architecture, process scheduling, memory management
- Concurrency
 - Threads, deadlock, critical sections, mutual exclusion, etc.
- Persistence
 - I/O

Admin: Evaluation

- Multiple projects
- 2 midterms
- 1 final



Probably 3 but may be as many as 5

Admin: What you get from this class

- ◉ Some C++ experience
- ◉ How an OS works (multitasking)
- ◉ Process scheduling
- ◉ Memory Management
- ◉ I/O management and File Management
- ◉ Threads and concurrency



Most Useful

Admin – Linux

- Please use Ubuntu 18.04 LTS

Admin – Linux – Why?

- Most of the worlds OSs are based on unix like kernels (Mac, Android, Linux)
- Client side, games, laptops , desktops
 - Windows
- Handsets
 - -Android
- Servers
 - Linux
- Most high performance remotely hosted (cloud) machines are linux (AWS, paperspace, etc)
- See Linux - tutorials on course website

Admin: Language

● C++

- One C++ starter project
- The rest will be OS specific

● Why C++

Admin: Compiling and debugging

- C and C++ both compile to an executable
- Can use many compilers (clang, gcc, G++ ...)
- We will use gcc version 7.4.0

Admin: Development Environment

- Could use vim, g++, gdb, valgrind, tmux for a command line only dev environment
- Or an Integrated Development Environment (IDE)
- Lots to choose from, Codeblocks, Netbeans, Ms Visual Studio, Eclipse CDT...Clion
- We will use Eclipse CDT

Admin - Git

- You will use version control professionally, best to learn it now
- See 'Git-The simple guide' on course website
- In class demo