CSc 360
Operating Systems
Introduction

Jianping Pan

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About the course

- *Introduction* to **Operating Systems**
  - lectures: MWR 3:30-4:30pm, ELL 160
  - http://www.csc.uvic.ca/~csc360
    - lectures, tutorials, discussion board, etc
  - prerequisites
    - Data structures (CSc 225)
    - Computer architecture (CSc 230)
    - System programming (CSc/SENG 265, CENG)

About the course instructor

- Jianping Pan
  - pan@uvic.ca
  - office hours: MR 2:00-3:30pm
    - EOW 323, x7226; after May 22nd, ESS 566, x5796
  - work experience
    - UVic, industry research labs, UWaterloo, …
  - research area
    - computer networks and distributed systems
    - http://web.uvic.ca/~pan

About the tutorial instructor

- Julie Beeston
  - juliebeest@hotmail.com
  - tutorials: F 2:30-3:30pm, ELL 160
    - tutorial starts this week!

Course materials

- Required textbook
  - Operating system concepts, 7th edition
- Reference textbooks
  - Modern operating systems, 2nd edition
  - Operating systems: a modern perspective, 3rd e
  - Operating systems: a systematic view, 6th Ed
- Explore further
  - web links @ course web site; Google!

What's operating system?

- OS is a *special* program
  - run "directly" on computer hardware
    - CPU, memory, I/O, etc
  - support many other programs
    - system programs: shell, compiler, assembler, etc
    - application programs: editor, browser, game, etc
- Examples
  - Linux, Unix, Windows, and many others

What operating systems offers?

- Computer systems
  - hardware, system programs (**OS**+), apps, users
- OS: between hardware and other software
  - present a virtual machine to other software
    - hide hardware details, extend hardware features
    - hardware++
  - provide controlled access to hardware
    - restrict hardware access, manage hardware resources
    - hardware--

Why operating systems?

- C&C: control and coordinate
  - allow a program to use computer properly
    - program execution, error detection, …
  - allow many programs to use computer properly
    - resource allocation, conflict arbitration, …
- S&S: share and separate (protect)
  - share btw devices, programs, computers, users
  - protect one from all the others

Why study operating systems?

- How to use OS
  - not as a computer user
    - point-and-click or copy-and-paste
  - but as a system programmer!
- How to design OS
  - or design any *complex*, large-scale software
- How to implement OS
  - or write any effective and efficient code

Course objectives

- "An introduction to the major concepts of modern operating systems and the relationship between the operating system and the architecture of computer systems."
- Selected topics
  - process: process, thread, scheduling, synch
  - memory: memory management, virtual memory
  - storage: file systems, I/O systems

Your participation

- Lectures
  - bonus questions!
- Assignments (24%)
  - intensive programming
- Tutorials
  - help you with lectures and assignments
- Exams
  - midterm (26%); final (50%)

Suggested approach

- Before lecture
  - read textbook; find questions
- Attend lecture
  - take notes; ask questions!
- After lecture
  - explore further; write assignments (start early!)
  - get help and help others (discussion board)
- Attend tutorial

More systems courses @ UVic

- Computer networks (CSc 450/CENG 460)
- Embedded systems (CSc 460)
- Multimedia systems (CSc 461)
- Distributed systems (CSc 462)
- Topics in systems (CSc 485A-H)
  - advanced operating systems
  - advanced computer networks
  - wireless mobile networks, etc

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Your feedback

- Teaching/learning is interactive
  - two-way communications
- Let me know
  - what you think about lectures, assignments, tutorials, exams, topics, …
  - what you want to know more or probe further
- You can *always* reach me
  - in class, during office hours, by email/phone

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Course policies

- See official course outline
  - late assignments, mark appeals, etc
  - academic integrity
  - accommodation, etc
- No group assignment/project
  - collaboration/participation is encouraged
  - responsibility: your submitted work is yours
  - obligation: give credits to references

Assignment 0

- Due on Friday, May 5th, 2006
- Send an email to pan@uvic.ca
  - Subject: [csc360] A0
    - name, student number, academic program
    - things you want to know in OS
    - issues with course logistics
    - any other questions on the course
    - a URL to a mug shot
      - let me know you!

This lecture

- An introduction to the course
  - who, when, where, what
  - course materials
  - course objectives
  - course topics
  - you and the course

Next lecture

- An overview on operating systems
  - read OSC Chapter 1