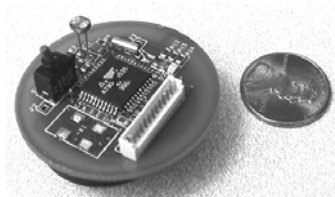# Operating Systems

ECE344
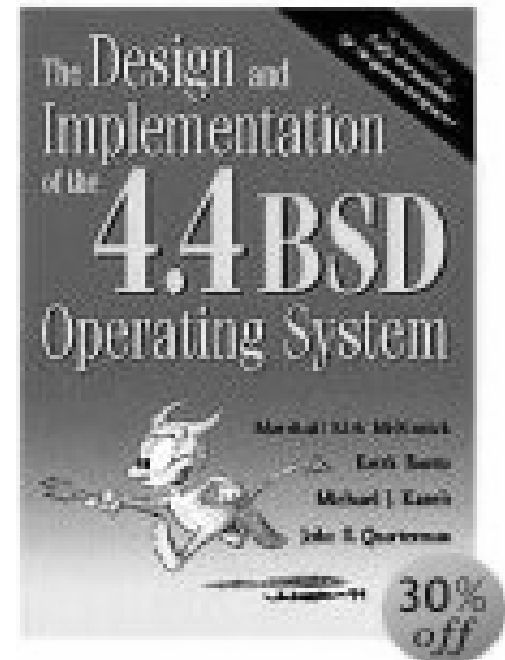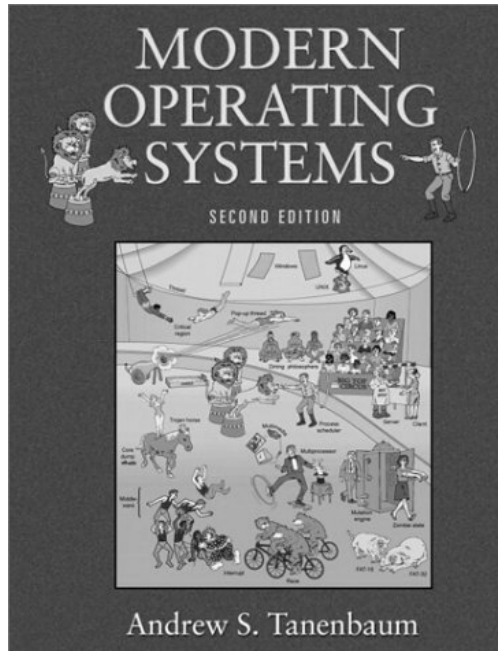
Hans-Arno Jacobsen

jacobsen@eecg.toronto.edu

Operating Systems Are Everywhere

Reading

OPERATING SYSTEM CONCEPTS
SILBERSCHATZ GALVIN GAGNE
SIXTH EDITION
WINDOWS XP UPDATE
WILEY INTERNATIONAL EDITION
Restricted: Not for sale In North America

MODERN OPERATING SYSTEMS
SECOND EDITION
Andrew S. Tanenbaum

The Design and Implementation of the 4.4 BSD Operating System
30% off
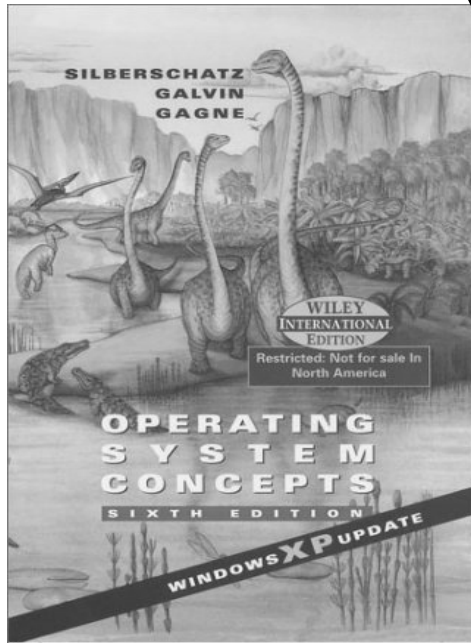
Any recent edition is fine.

High-level Overview

- OS structure, system calls, processes, threads
- Synchronization
- Inter-process communication
- Scheduling
- OS architecture
- Memory management

- Lectures on assignments

What's the Take-away at the End of the Day

- General idea of what an OS is and what it involves

- Multi-threading and synchronization

- Memory management

- **Assignments (!!!)**
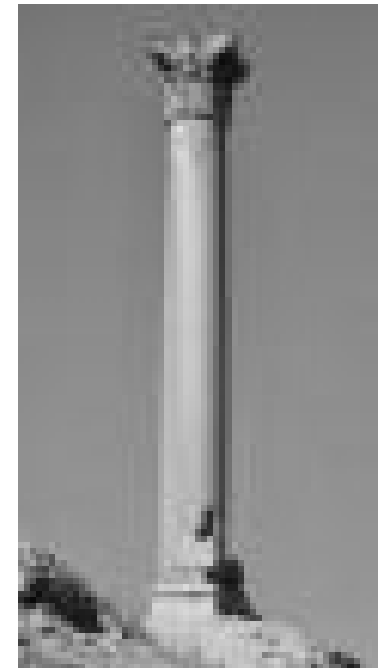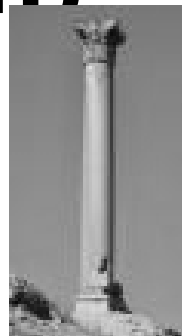
What this Course is Not About

- This course is not about Windows, Linux, any given system

- … programming for Windows, Linux, …
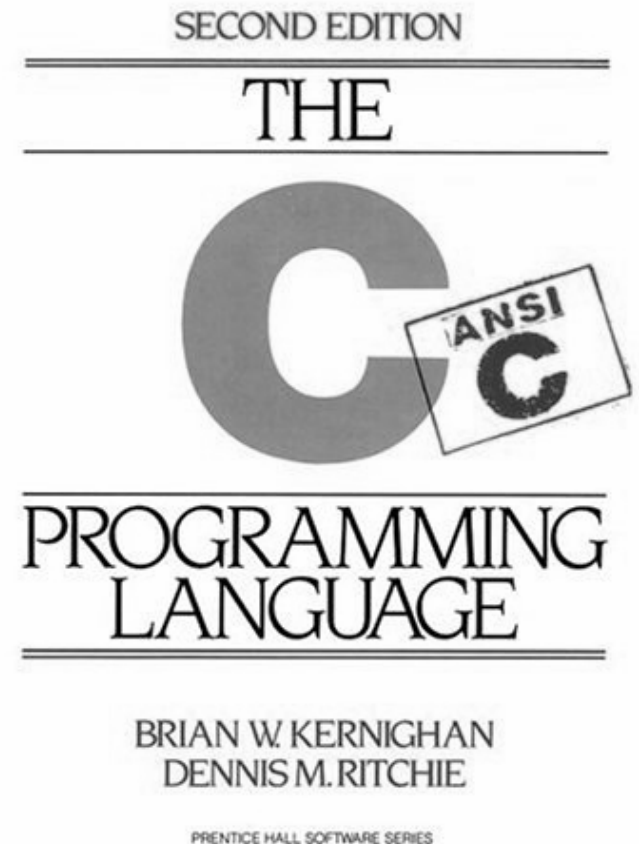
What this Course is About

- The course takes a more general approach
  - looking under the hood of an OS,
  - abstracting from the details of a given system
  - presenting concepts and algorithms

How to Approach the Course

- The course material is *fairly simple*
- The assignments are *harder*

- That means focus on the assignments and work hard
- The course material will come to you easily

Assignments

- You need to know your tools
- C, emacs/vi, gcc, gdb, …
- You will learn about
  - Large systems
    - OS/161
    - SYS/161

SECOND EDITION

THE

C ANSI C

PROGRAMMING LANGUAGE

BRIAN W. KERNIGHAN
DENNIS M. RITCHIE

PRENTICE HALL SOFTWARE SERIES

Assignment Infrastructure

OS / 161

Sys / 161

Solaris / Linux

ugsparc / …

Labs will Go Live Next Week

- We may post labs and Assignment 0 prior to next week
- The learning curve is fairly steep, start reading and playing with the OS
- You may use it at home (you're on your own)
  - Linux
  - Cygwin/Windows
- At the end of the day things have to run on ugsparc