

Introduction to SE 350

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Course Goals

- Learn the magic of operating systems
- Make informed decisions in industry

Lecture Objectives

- Learn what really happens, if you double click an application.
- How can you run two applications in parallel?
- How come I have 10GB of memory although I only have 2GB of RAM?
- Why is timing important and what does the OS do about it?
- What differs between operation systems?
- ...

Lab Objectives

- Learn about the challenges of writing an OS
- Enjoy the fun of low-level programming
- Get hands on experience with embedded programming
- Experience group dynamics
- Learn to manage larger projects and assignments

Course Web Resources

- Use UW-ACE:
<http://uwace.uwaterloo.ca>
- A special lab page:

Coordinates

- Lectures: 02:30-03:20MVF @ RCH 110
- Tutorials: 03:30-04:20W @ RCH 110

Course Instructor

- Sebastian Fischmeister
- DC 2538
- Office hours: (depends on your schedule)

Lab Instructor

- Irene Huang, i.huang@ece.uwaterloo.ca
- Office hours:

Teaching Assistants

- Tutorials:

- Bahador Khalegh, bkhalegh@ecemail.uwaterloo.ca

- Labs:

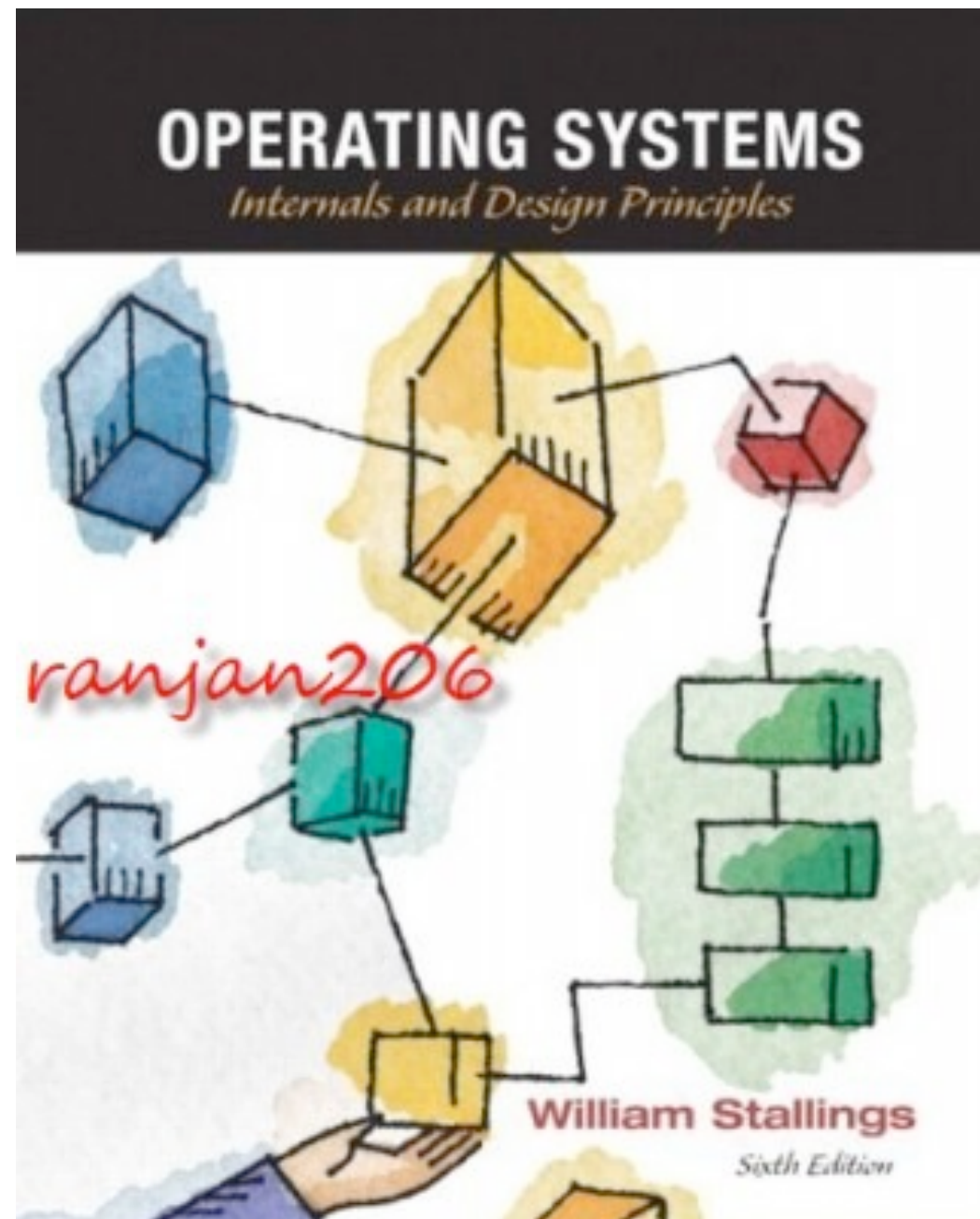
- Yanmeng Ba, yba@engmail.uwaterloo.ca
- Thomas Rademeister, treideme@shoshin.uwaterloo.ca
- Tarek Khalifa, tkhalifa@pami.uwaterloo.ca

Course Overview

- The book: Operating Systems: Internals and Design Principles, 6e.
- Mix of Powerpoints and blackboard writing
- Powerpoints available on UW-ACE
- **Read the book**
- **Take notes**

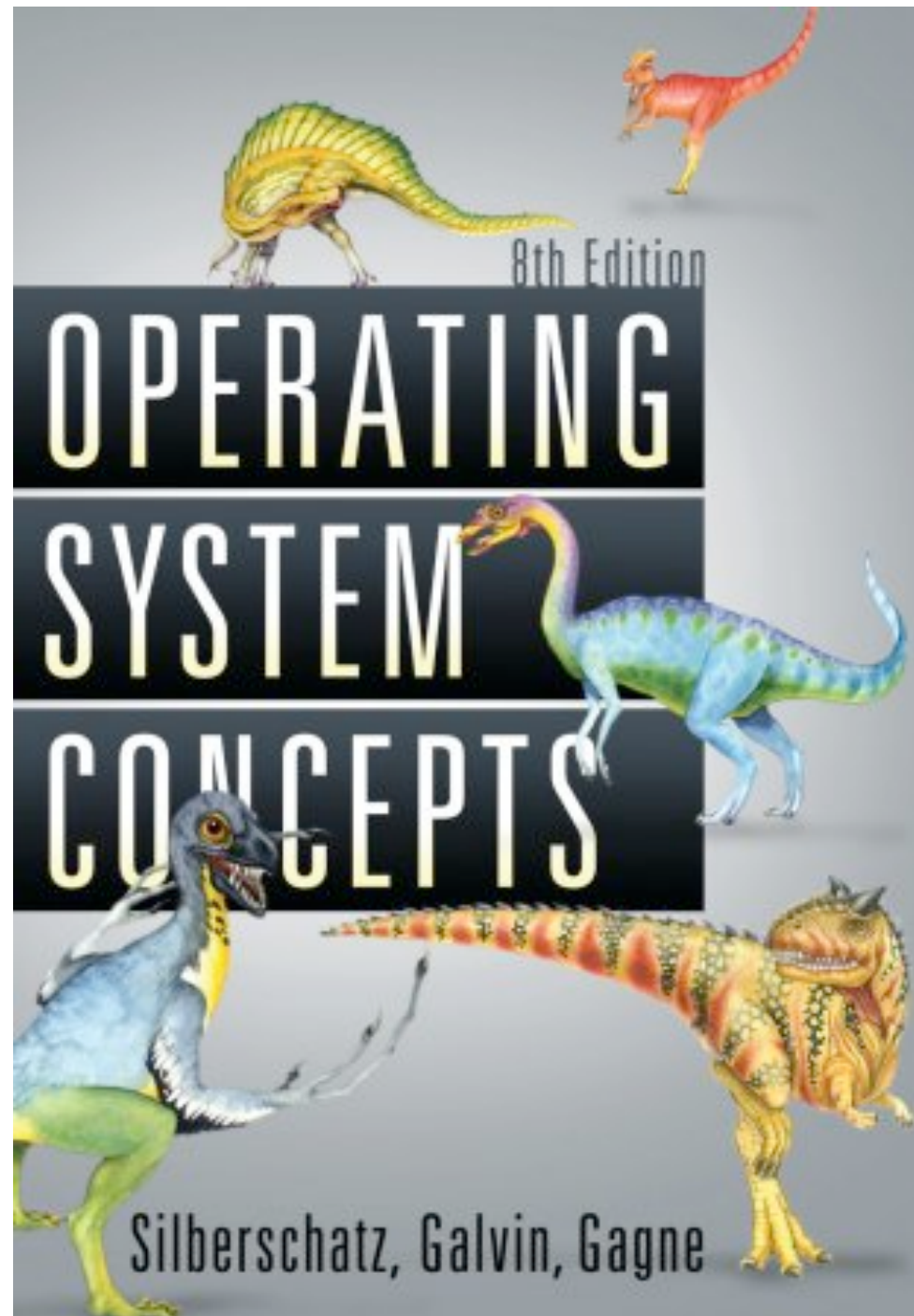
Course Textbook

- William Stallings, “Operating Systems: Internals and Design Principles”, Prentice Hall, 6ed.



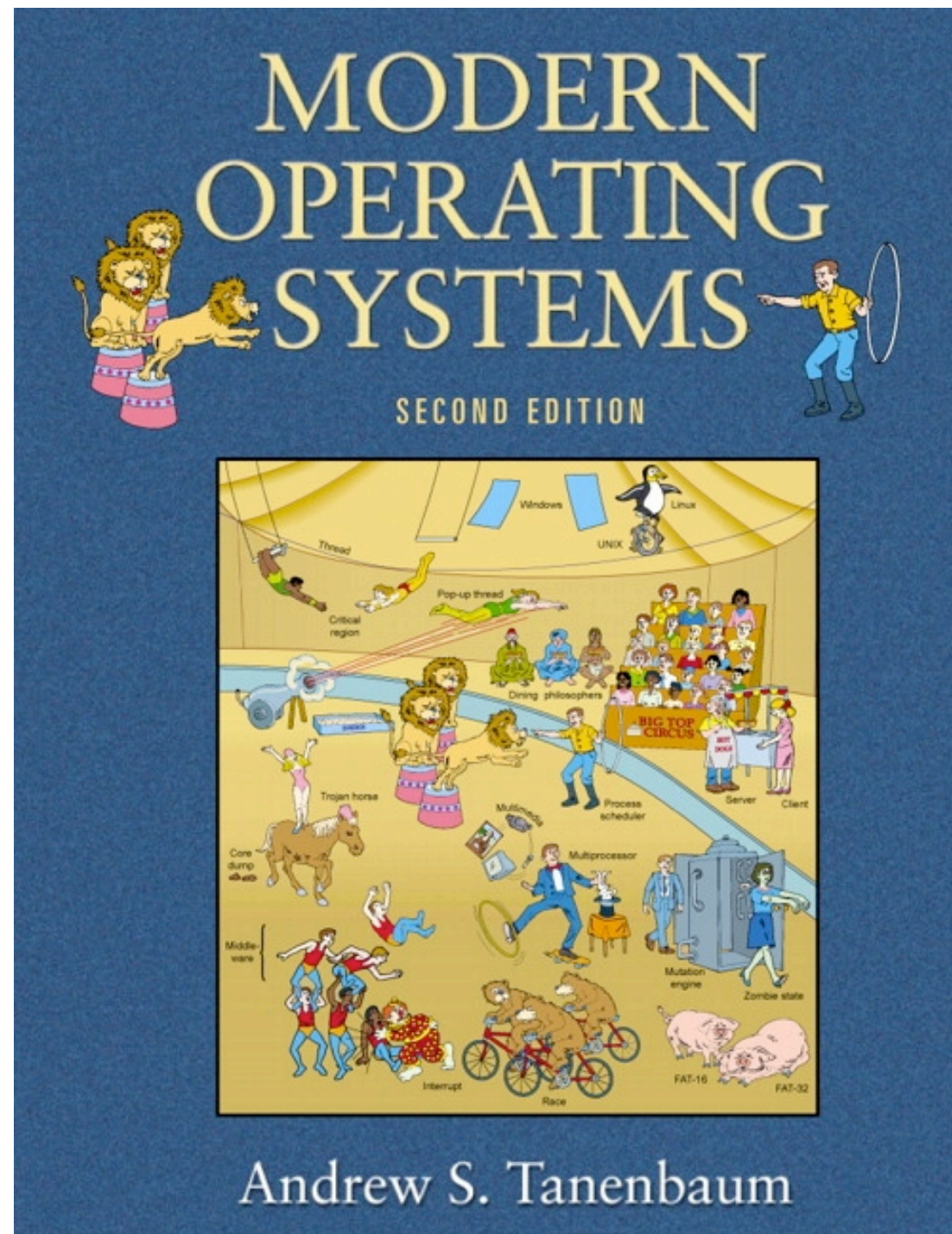
Second Opinion

- Silberschatz. “Operating System Concepts”. Wiley.



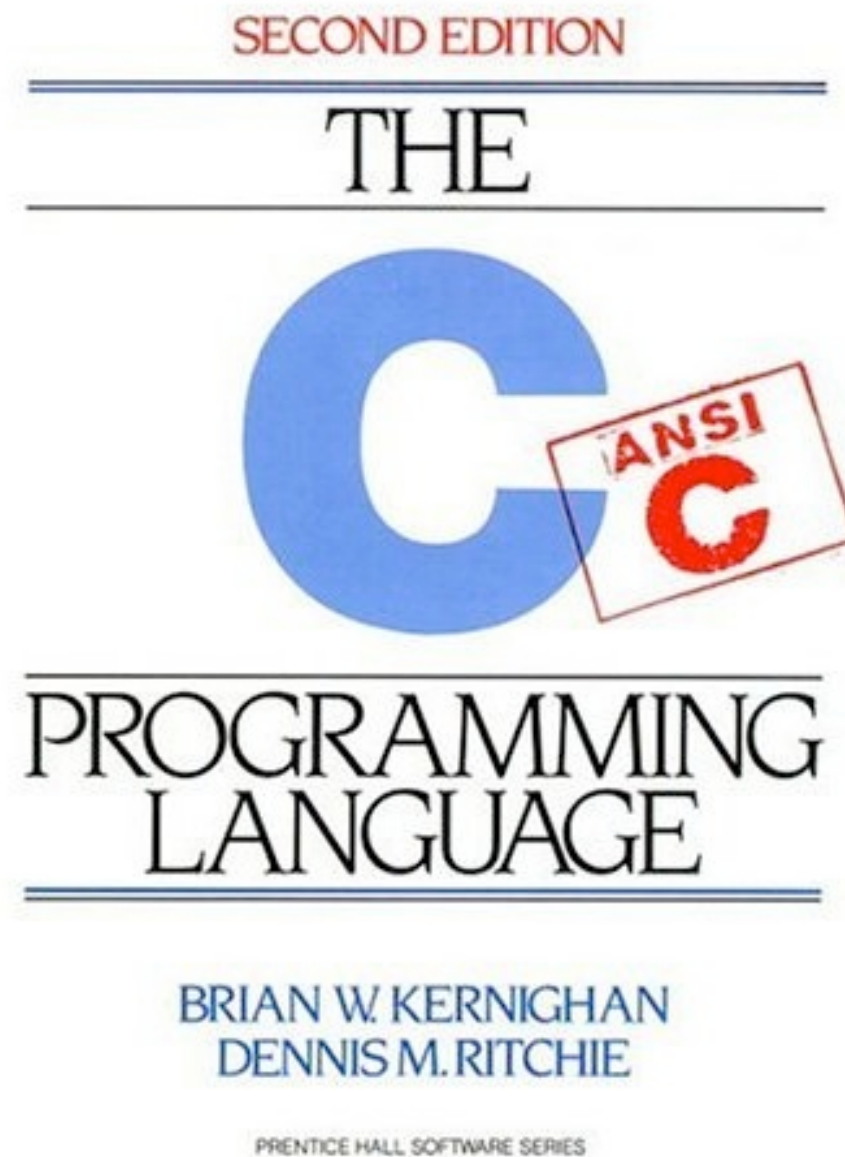
Second Opinion

- A. Tanenbaum. “Modern Operating Systems”, Prentice Hall.



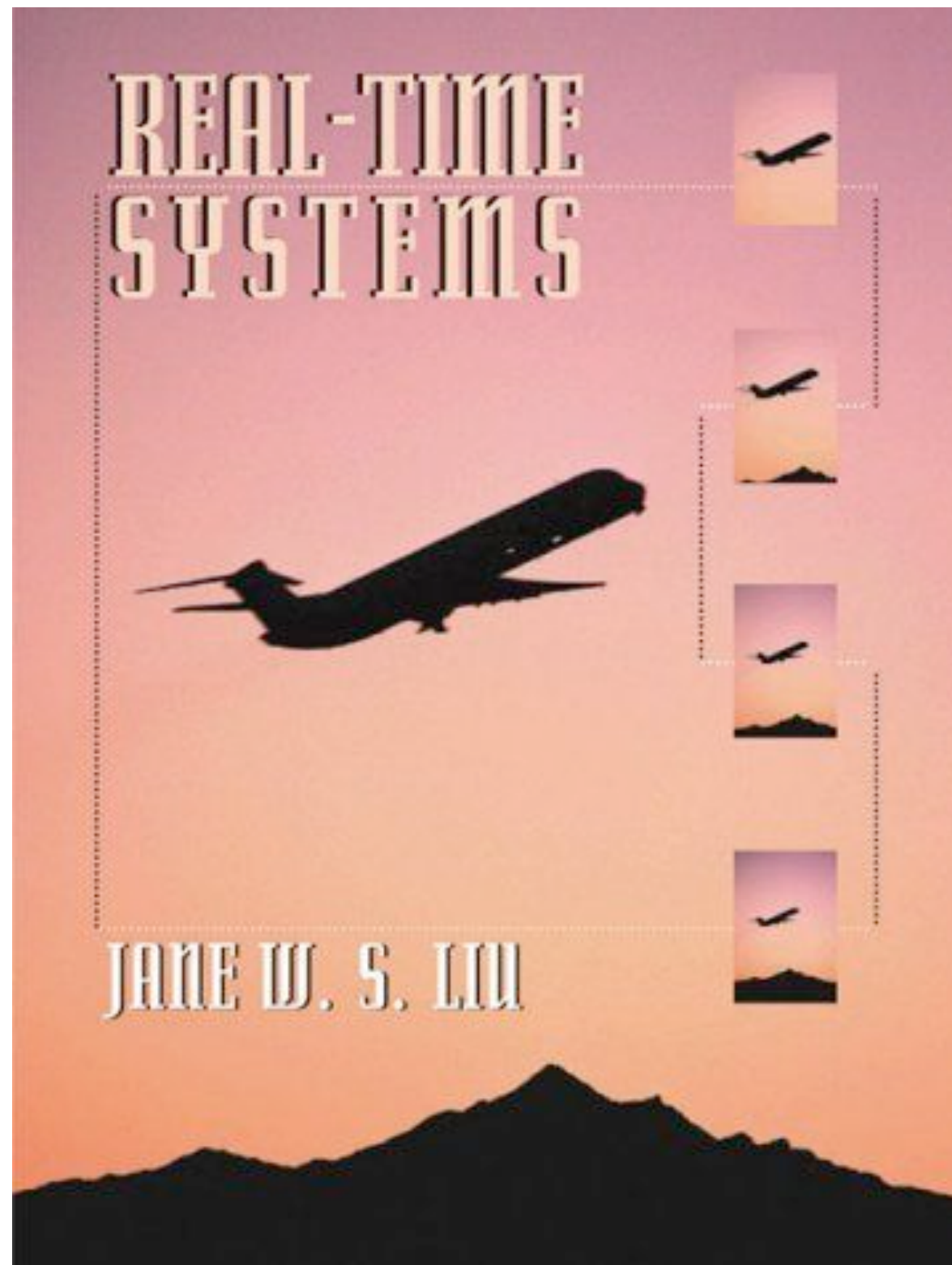
Additional Material

- Brian W. Kernighan and Dennis M. Ritchie, “The C Programming Language”, Prentice Hall.



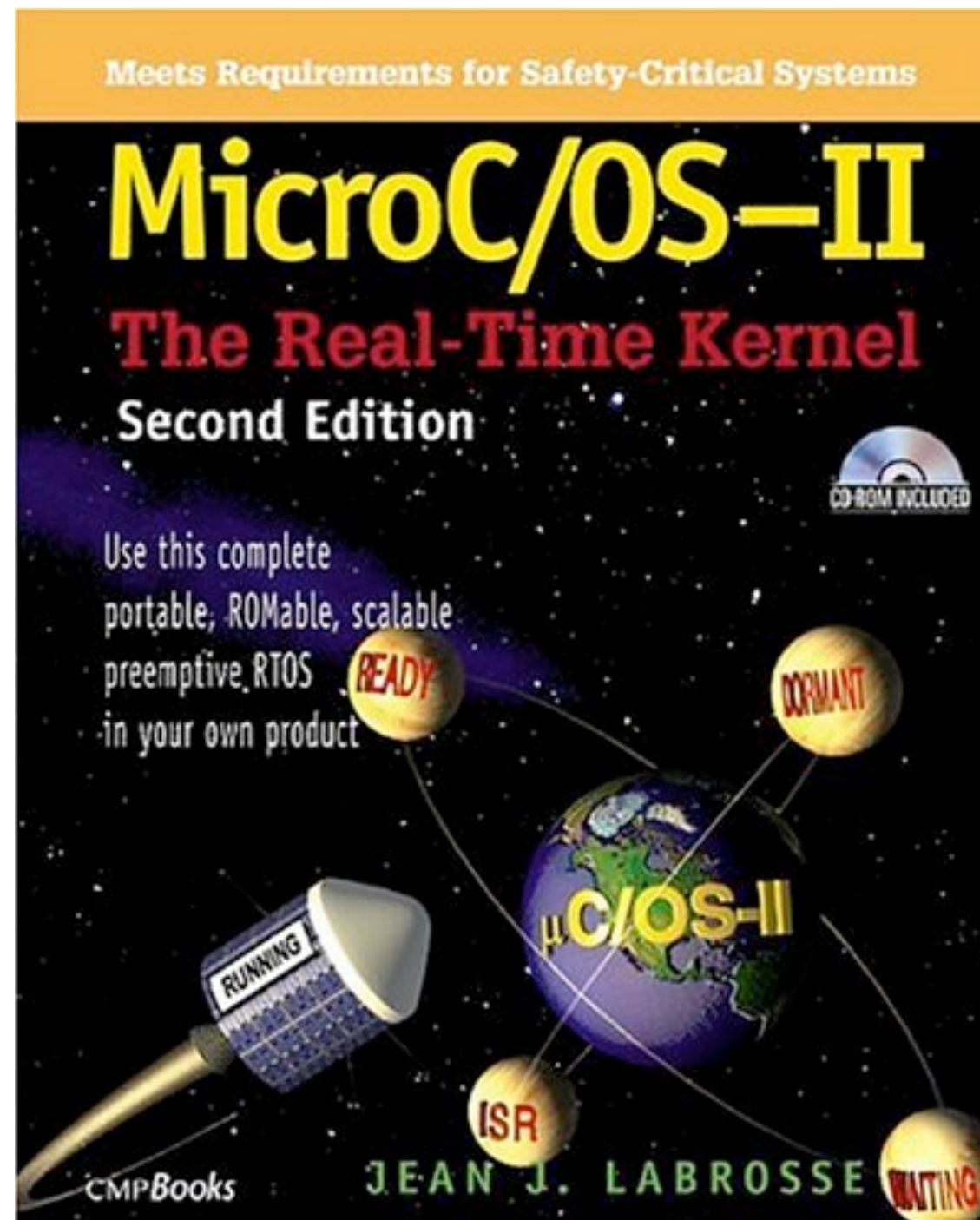
Additional Material

- Jane Liu, “Real-time Systems”, Prentice Hall.



Additional Material

- Jean Labrosse, “MicroC OS II: The Real Time Kernel”, CMP.



How to pass the course

- Requirements:
 - >50% on the lab (3 day grace period, 20% loss/d)
 - >50% on the final
 - >50% on the whole course
- Grading
 - Final exam: **50% (new UW requirement)**
 - Lab: 30%
 - 1st quiz (Feb 3): 5%
 - Midterm (Feb 24): 10%
 - 2nd quiz (March 17): 5%

How to do great in the course

- Ask questions
- Go to the tutorial
- Mail the tutorial TA
- Use the office hours
- **Try it in the OS you currently use**

How I'll help you to succeed

- Usual things:
 - Deliver good lectures
 - Try to get you interested
 - Ask provoking questions
- Unusual things:
 - One forced meeting per term
 - Answering questions during and after the lectures
 - Reasonable suggestions accepted

What exams look like

- Some conceptual questions
 - Explain four advantages of a microkernel compared to a monolithic kernel.
- Some detail questions
 - How does a context switch work?
- Some practice questions
 - Name five signals that can be sent to a process in a POSIX-compliant system and explain what they do.
- Some lab questions

Hocus Pocus

(ask questions)