Université d'Ottawa · University of Ottawa
School of Information Technology and Engineering (SITE)

CSI3131 - 3 cr
Operating Systems
Winter 2014

Professor: Ivan Stojmenovic
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Teaching Assistants: **Zhen Huang**, E-mail: ZHUAN045@uottawa.ca
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Schedule (Jan 6-April 4)
LEC 1 Tue 16:00-19:00 MNT 201
LAB 1 Thu 16:00-17:30 STE 2060 LAB 2 Thu 16:00-17:30 STE 0130
TUT 1 Thursday 14:30-16:00 STE C0136

Description
(3 hours of lecture per week, 1.5 hour tutorial per week, 1.5 hour lab per week, 3 credits)

Principles of operating systems. Operating systems design issues. Process management, process scheduling, concurrency issues. CPU scheduling. Memory management. Virtual memory. Mass storage systems. Input/Output system. File system. Security and protection. Examples of operating systems.

Prerequisite(s) : CEG2136, CSI2110.

Objectives

By the end of the course, the student shall:

- **Theoretical**: obtain a good comprehension of *principles* used by operating systems.
- **Tutorial/labs**: have practical experience with real operating systems (Linux) and concurrence/threads (using Java virtual machine) and solving problems encountered with operating systems.

Textbook
Operating Systems Concepts, Silberchatz, Galvin, Gange, 9th edition, Wiley, 2012

References
The following books are available at the library:

1. William Stallings, *Operating Systems: Internals and Design Principles*, 4th edition, Prentice-Hall, 2001, ISBN: 0-13-031999-6.
2. *Applied Operating System Concepts*, A. Silberschatz et al., Wiley, 2000.

Course Material and E-mail

This course is managed using a Virtual Campus Site. All material (course notes, assignments, labs, tutorial, etc.) is published there and also duplicated on the professor's website. Important announcements area also posted there and may be also sent to your university e-mail directly. Be sure to consult the website and your e-mail account regularly.

Grading

Assignments (A)	25 %
Midterm exam (M)	25 %
Final exam (F)	50 %

If M+F < 37.5, the **final mark** = ((M+F)/75) * 100
Otherwise **final mark** = A+M+F

Assignments: Three to four assignments must be completed. Solutions to the assignments shall be posted after assignment due dates. Students are encouraged to discuss problems, but must complete the assignments individually. All questions relating to assignments and its marking must be discussed with the teaching assistant (TA).

The midterm exam is a closed book exam and covers the material presented in class prior to the midterm break. The exam date is **Tuesday, February 11th,** 16h00-17h30 in LEE B163**.**
The final exam is also a closed book exam and covers all material presented during the term. The exam date is set by the University Registrar during the exam period.

Course plan

- Review of computer architecture.
- General structure of operating systems
- Description and control of processes.
- Threads.
- Scheduling with a single processor
- Concurrence: mutual exclusion and synchronization
- Concurrence: deadlock and famine.
- Memory Management.
- Virtual Memory.
- File Management.
- I/O Management.
- Security and protection.