Instructor

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Course Objectives

This course is concerned with distributed processing: concepts, techniques, analysis, and performance. Topics will be chosen from:

- Models of concurrent computations, characterization of concurrent computations and performance measures, units for implementation of concurrent computations (processes and threads).
- Web services, Clouds and Grids
- Middleware: Heterogeneous systems and inter-operability, Distributed Object Oriented Systems, CORBA/DCE/DCOM, Cloud/Grid Middleware.
- Resource Management: Resource allocation, scheduling (including Cloud and Grid scheduling and real-time systems), load sharing, distributed storage.
- Communication and synchronization: remote procedure calls, inter-process communication and synchronization on distributed systems.
- Protocols for computer communication networks (layered structure and ISO protocol model), ISO higher layer protocols.

Basic concepts will be covered through formal lectures. A more informal discussion will take place for addressing current research issues. The students will work on (up to two/three) assignments that will further their understanding of the subject.

Each student will take a deeper investigation of a specific topic and make a class presentation based on the available literature on the topic.

Course Web Site

CULearn

Evaluation and Marking Scheme
**Approximate Marking Scheme:**

Assignments: 20%

Class Presentation: 15%

Project: 30%

Exam (in class): 35%

**Project**

The student has to complete a course project that is concerned with a research problem.

**Exams**

The course also has an exam. The exam is for evaluation purposes only and will not be returned to students.

**General Regulations**

- **Copyright on Course Materials:** The materials created for this course (including course outline, slides, posted notes, labs, project, assignments, quizzes, exams and solutions) are intended for personal use and may not be reproduced or redistributed or posted on any website without prior written permission from the author(s).

- **Deferred Term Work:** Students who claim illness, injury or other extraordinary circumstances beyond their control as a reason for missed term work are held responsible for immediately informing the instructor concerned and for making alternate arrangements with the instructor and in all cases this must occur no later than three (3.0) working days after the term work was due. Consult the section 9.3 of the Graduate Calendar for more information.

- **Academic Integrity:** Students should be aware of their obligations with regards to academic integrity. Please review the information about academic integrity at: https://carleton.ca/registrar/academic-integrity/ This site also contains a link to the complete Academic Integrity Policy that was approved by the University's Senate.

- **Academic Accommodations:** Requests for Academic Accommodation. You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:
  - **Pregnancy obligation**
    Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
  - **Religious obligation**
    Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-
• **Academic Accommodations for Students with Disabilities**
  If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

• **Survivors of Sexual Violence**
  As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton’s Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

• **Accommodation for Student Activities**
  Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf