

Lecturer:

Professor Shikharesh Majumdar, Room 4438 ME, 520-5654, email:majumdar@sce.carleton.ca

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, Grids and Clouds
- ◆ Middleware: Heterogeneous systems and inter-operability, Distributed Object Oriented Systems, CORBA/DCE/DCOM, Grid/Cloud Middleware.
- ◆ Resource Management: Resource allocation, scheduling (including Grid and Cloud 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. The student has to complete a course project that is concerned with a research problem. The course also has an *exam*. *This exam is for evaluation purposes only and will not be returned to the student.*

Approximate Marking Scheme:

Assignments: 20%
Class Presentation: 15%
Project 35%
Exam: 30%

Prerequisites: Permission of the instructor

Students with Disabilities:

Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities for a formal evaluation of disability-related needs. Registered PMC students are required to contact the Centre, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you require accommodation for your formally scheduled exam(s) in this course, please submit your request for accommodation to PMC by November 11th 2011 for Fall term (December exams).

Plagiarism:

Plagiarism (copying and handing in for credit someone else's work) is a serious instructional offense that will not be tolerated. Please refer to the section on instructional offenses in the graduate Calendar for additional information.