

CS 775/875
Distributed Systems
Spring 2008
Course Outline

Instructor: Ravi Mukkamala
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Lecture: Tuesday 4:20-7:00 PM (Hughes 1110)
Office Hours: Tuesday 1200-1300 (E&CS 3317)
Prerequisites: CS471, CS550, CS555. If you have not taken these courses, contact the instructor.
Text: *Reliable Distributed Systems: Technologies, Web Services, and Applications: Ken Birman: Springer 2005*

Course Objectives

The main objective of this course is to study the design issues involved in distributed computing systems. As part of this course we shall discuss the motivation for building distributed systems, various algorithms and protocols proposed in literature for system operability, and look at some of the experimental distributed systems that have been built in the last few years. We will pay special attention to the fault-tolerant and performance aspects of these systems. The project component of this course will enable the students to get hands-on experience of implementing some of the distributed algorithms.

Grading Criteria

Your grade will be based on the following:

Mid-term Examination	100 points	3/4/08
Final Examination	125 points	5/6/08
Project	75 points	
Homework	75 points	
Class presentation	25 points	
Total	400 points	

Make-up Tests and Late Assignments

Late homework and papers and make-up exams will not normally be permitted. I will give appropriate consideration to documented emergencies, but such arrangements must be made *prior to the due date* in any situations where the conflict is foreseeable.

Grading Scale

Percentage	Letter Grade
95-100	A
90-94	A-
87-89	B+
84-86	B
80-83	B-
76-79	C+
72-75	C
69-71	C-
0-68	F

Honor Code

All students are expected to abide by the ODU Honor Code. This means that *all* exams and assignments are to be the exclusive work of the student. An honor pledge will be required on *all* work which is to be graded. For more details on the ODU honor code, refer to the Honor pledge posted on the course web-page.

E-mail

I will use electronic mail on the CS Dept. network for timely communication, especially of clarification/corrections/changes to homework or projects. Students should check their e-mail on a regular basis.

Homework

There will be paper-based homework as well as programming homework. While the students are encouraged to discuss the problems, each individual should prepare their own answers. Any violation of this rule will be considered as cheating and will be dealt with accordingly. Programming homework will involve Sun RPC/RMI, Jini, and .Net.

Project

The project typically involves implementing a subsystem of a distributed system. It is a team activity, with each team consisting of 1-2 members. In order to assign individual grades to the team members, each team should maintain a project journal of all their activities. The journal would reflect the minutes of the meetings, who has suggested what, who has implemented what, etc. It is preferable that each team designate a minute taker for each meeting. The minute taker is a rotating position and is responsible for writing the journal.

Presentation

Each student will be required to make a 15-minute presentation. It will be graded by me and your classmates. Some of the topics to be covered in the presentations are: Arjuna, Bayou, Chord/CFS, Pastry/PAST and Scribe, and QuickSilver.

Attendance: Attendance at classes is not generally required, but students are responsible for all material covered and announcements made in class. Consequently, if you are going to miss class, be sure to get notes, handouts, etc., from another class member.

Academic Honesty: Everything turned in for grading in this course must be your own work. The instructor reserves the right to question a student orally or in writing and to use his evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating. Violations will be reported to the Honor Council for consideration for punitive action. By CS Dept. policy, students found to be in violation of this rule will, at the very least, receive a failing grade in the course and may be subject to stiffer penalties.

Course Outline:

In addition to the chapters listed below, additional readings may be made available via the course web page or through handouts in the class.

Lecture and Homework Schedule

Month	Day	Chapters	
January	15	Chapters 3-5	Client/Server Models (SOAP)
	22	Chapters 6-7	CORBA
	29	Chapters 8-10	Web technologies and Web services
February	5	Chapters 11-12	.Net, J2EE, and Jini
	12	Chapters 13-15	Failures and recovery
	19	Chapters 16-19	Group communication-1
	26	Chapters 16-19	Group communication-2
March	4	Exam I	Mid-term Examination
	11	NO CLASS	Spring Holiday
	18	Chapters 20-21	Applications of reliability techniques-1
April	25	Chapters 20-21	Applications of reliability techniques-2
	1	Chapters 22-24	Security, Clock synchronization, transactions-1
	8	Chapters 22-24	Security, Clock synchronization, transactions-2
	15	NO CLASS	
	22	Chapters 25-26	P2P, Web services
May	29	Project presentations	
	6	Final Examination	3:45-6:45PM (Hughes 1110)