



UNIVERSITY of NEW ORLEANS

DEPARTMENT OF COMPUTER SCIENCE

CSCI 6450: Principles of Distributed Systems

Tue/Thu 6⁰⁰-7¹⁵pm MATH 229

Fall 2009

Syllabus

Instructor: *Dr. Vassil Roussev*

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 Office Hours: Tue/Thu 5⁰⁰-6⁰⁰pm (primary), 9¹⁵am-10³⁰pm (backup)

Prerequisites:

- CSCI 4401 (Operating Systems)—required
- CSCI 4311 (Networking)—strongly recommended
- Essential programming experience

Textbook(s):

- **Required:** *Distributed Systems: Concepts & Design*, 4th ed. by *Coulouris et al.* ISBN: 0-321-26354-5.
- Helpful: *Distributed Systems: Principles and Paradigms*, 2nd ed. by *Tanenbaum & van Steen.* ISBN: 0-132-39227-5.
- Helpful: *Distributed Computing: Principles, Algorithms, and Systems*, 1st ed. by *Kshemkalyani & Singhal.* ISBN: 0-521-87634-6.
- Reference: *Internetworking with TCP/IP: Principles, Protocols, and Architectures*, vol.1, 4th Ed. by *Comer.* ISBN: 0-13-018380-6.
- Reference: *TCP/IP Illustrated*, vol. 1-2, by *Stevens.*
- Reference: *Parallel Programming with MPI*, by *Pacheco*, ISBN: 1-55860-339-5.

Objectives

The main goal of this course is to provide a conceptual and practical introduction into the world of distributed computing. At the end of the course, students will have a foundation of upon they can build more specialized skills in the real world. They will also have basic experience with some standard technologies such as sockets and RPC, as well as exposure to recent innovations in the field.

Overview:

The course will be entirely online and will be delivered through a variety of means some of which are tentative at this stage. The overall goal is to come as close as possible to the normal in-class

environment. Note that this version of the syllabus is, essentially, the same as the regular planned class at UNO—only the means of delivery have changed for obvious reasons.

- The primary source of information for the class will be the course website available as a link from <http://roussev.net>. All class materials (slides, lectures, homework, etc.) will be published through the web page. There will be an announcement list and a discussion list to which you are strongly advised to subscribe.
- The above email alias is the primary means of communication and has the explicit purpose of preventing student emails being misclassified as 'junk'. All messages to the '6450' alias are forwarded to multiple accounts and placed in dedicated folders. Along the same lines, use meaningful subject lines to avoid misclassification. While effort will be made to make sure that student emails are answered daily (on weekdays), **you should not delay important questions until the last minute**. The latter is particularly relevant to tests, programming assignments, and written homework.
- *Course projects* are an integral part of the course. All assignments will be performed on an 8-node cluster which is dedicated to the course. You will need to log in remotely in a Linux environment and perform your testing (you could perform much of the development on a local machine).
- *Office hours* will be held at the instructor's office. You can phone in during those dedicated times and send email at any time but at no time should you rely on voicemail.

Grading: All work will be graded based on 100 pt scale and will count towards your final grade with the following weights:

Midterm Exam	→	20%
Final Exam	→	20% (comprehensive)
Programming Assignments/Project	→	45%
Written Homeworks (2-3)	→	15%
Bonus Factor	→	5% (class participation etc.)

Grading scale: A = 90+, B = 80-89, C = 70-79, D = 60-69, F = 0-59.

In order to get a passing grade in the class you must get a passing grade on the exam part (midterms and final).

The "bonus factor" will be applied to determine border cases but only in student's favor (e.g., you will *not* fail with a total of 60 but you may get an A with a score of 89).

Attendance:

As per university policy, all students are expected to attend all class meetings. Experience & statistics show a strong correlation between high grades and regular attendance. (However, regular attendance by itself does not automatically mean a high grade.)

Tests: Bring a few pens/pencils and a fresh brain **only**—you will need nothing else and you will be allowed to use nothing else. Everything is closed book/notes.

Programming/Written Assignments:

Expect to be busy with assignments—most of the time there will be an outstanding assignment of some kind so plan accordingly. You will have 1-3 weeks to complete each assignment and (save for hurricanes & other emergencies) you should consider the due date to be a **hard deadline**.

No late assignments will be accepted. If you believe that you have some extenuating circumstances talk to me early and as much in advance ***before*** a deadline as possible – last minute requests are strongly discouraged.

Cheating:

Don't do it! If you get caught the consequences are very unpleasant. Make sure you understand everything that you have submitted because you may be asked to explain it in case there are similarities that look less than accidental.

Cheating is:

- Copying, in whole or in part, the solutions of former students, current students, or any other human being, alive or dead. **All of your code and answers must be your own and you must be able to explain them in detail.** Copying includes transmission through the Internet (email, the Web, IM, p2p, YouTube, etc), smoke signals, or any other communication means.
- Obtaining solutions from the Internet or other archival sources.
- You are not allowed to even *look* at a solution.

Discussing assignments at a high level for clarification, discussing problems concerning the computing equipment, and studying in groups for examinations is not cheating, but every word you type for programming and written assignments must be your own!

If you have any questions about acceptable teamwork—ask the instructor.

Special cases:

If you have any special circumstances (disabilities, active/reserve member of the armed forces, sports team member, family matters etc.) come and talk to me privately ***this week***. If circumstances arise during the semester inform me ASAP.

Privacy:

The general university policy is that, your grades and personal information are confidential—I will discuss them with you ***only*** in person.

If you are asking for make up test or late submission due to a medical condition you should get a note from a doctor. The note does **not** need to give the exact diagnosis but only state how it affects your ability to participate in the course.

How to succeed in this class:

- Read the assigned topic from the book *before and after* the class. This is a requirement and your response to questions will affect the "bonus factor" of your grade.
- Take advantage of the PDF slides to save effort in taking notes.
- Pay attention and participate in the class discussions. If you plan on snoozing in class you should consider taking rest in bed instead.
- If you don't understand something get help ***early***.
- Start work on assignments/homeworks ***early***.
- Come to office hours prepared with ***specific*** questions.
- Be honest with yourself and study at home – the university expects you to put in about **9 hours** of preparation per week for this class for a **C** grade.
- Start work on assignments/homeworks ***early***.