

Introduction to Large Scale Processing Systems
CIS 64E (CRN# 32934) – De Anza College
Syllabus – Winter 2015

Instructor: Mounjed Mousalem
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Lecture: 6:00 pm – 7:50 pm, MW in Room L75
Textbooks: [Required] *Distributed Systems: Concepts and Design* by George Coulouris, Jean Dollimore, Tim Kindberg, Gordon Blair, Addison-Wesley; 5th edition © 2011.
[Optional] *Distributed Systems: Principles and Paradigms*, by Andrew S. Tanenbaum and Maarten van Steen, Prentice Hall
[Optional] *Operating Systems Concepts, 9th Edition*, by Silberschatz, Galvin Gagne, Wiley © 2013
[Optional] *Principles of Transaction Processing*, 2nd edition, by Philip Bernstein and Eric Newcomer, Morgan Kaufmann Publishers, © 2009.

Course Description and Prerequisite:

Addresses fundamental challenges in the design, implementation and deployment of large-scale distributed systems. Concepts covered include concurrency, synchronization, connection establishment, event handling, inter process communication, storage management, and service registration, discovery, and lookup. It also covers issues related to distributed-objects such as life cycle management, mobility, security, naming, location, evolution, and autonomy.

Grading: Your grade will be determined by the following course components:

Exams (50%):	Midterm Exam, Wednesday, February 18, 2015 (25%) Final Exam, Wednesday, March 25, 6:15 p.m. – 8:15 p.m. (25%)
Assignments (30%):	6 Assignments (6x5% = 30%)
Projects (20%):	Two Team Project (2x10% = 20%)

Grades will be assigned according to the following scale:

% needed for	this grade
97	A+
91	A
88	A-
86	B+
80	B
78	B-
75	C+
67	C
60	D
< 60	F

Please keep all graded papers until you have received your official grade report. If there is any dispute over a recorded score, you must produce the graded assignment or exam.

Attendance and Course Policy:

Attendance is mandatory. The exams are based on class lectures and the techniques you have used on the related programming assignments, so any absence is a disadvantage.

It is your responsibility to notify me at the earliest possible time of an unavoidable absence for a valid reason (medical, family situation, college trip, etc.). I reserve the right to drop any student who has missed three consecutive classes. However, under normal circumstances I do NOT drop students from the class rolls.

If you decide to drop the course, you must formally drop the course through the fhda web site (please see next section). If you simply disappear without going through the appropriate procedure, you will probably receive an "F" for the course.

Programming assignments and projects must be coded and running on the due date, and must be DEMONSTRATED to me for credit.

Drops and Withdrawal:

For a complete reference of all withdrawal dates and deadlines, refer to the De Anza College registration page at the college web site here:

<https://www.deanza.edu/calendar/winterdates.html>

To continue in this class, you must participate weekly in all areas: assignments, exams and discussion.

Collaboration:

Working together on non-team assignments = ZERO + Dean of Student's Office.

Husbands and wives, roommates, and friends taking the course together: don't discuss ungraded homework with each other outside the public forums. Instead, bring up your questions during lecture sessions or direct them to the public (Catalyst) forums associated with this course where everyone can comment and I can moderate the discussion. Do not look for answers on cheater web sites or pay-for-help web sites.

Any variation of collaborating or copying programming assignments is prohibited. The assignment must be 100% your own work. Changing a few variables around to make them look different won't fool me. And if it does fool me, you probably had to change so many things that you knew enough to do it yourself in the first place.

There is a place to ask for help with homework: the Public Forums labeled for that purpose or the Tutorial Center.

If you accept help from someone who is not trained to teach without giving away the answer, it will short-circuit your learning process -- you will actually become weaker. Now, you don't have to agree with me - but you do have to follow the rule.

For those of you wishing to give help, please do not give away the answer. Either tell the person where they can look to find the solution, give them a general idea, or ask them to ask me. Don't post actual assignment code.

During exams, you may use your laptop ONLY to view class Notes.

*There are **NO** makeup tests.*

Student Learning Outcomes:

Design, implement and debug a distributed system using technology like Web Services.

Course Outline:

A General Course outline for this and other CS courses can be found:

<https://www.deanza.edu/publications/catalog/search/outlinepublic.html?searchID=CIS22C>

Course Catalog:

You can access the official course outline of record for all CIS courses here:

<https://www.deanza.edu/cis/courses.html>

Workload:

In addition to class attendance, you are expected to review your notes, prepare for exams and work on each of the programming projects. To pass this course you have to make time to do both of these activities: exams and programming projects. This course is a lot of fun, and a lot of work.

Weekly Time Estimate:

Module Reading: about 5 hours, this includes pasting code into your compiler and trying it out.

Project-related assignments: about six to ten hours. This varies greatly with different individuals; some students take one hour, while some other students take 15 hours.

Submitting Programming Projects:

There will be four programming projects. You may do the programming assignments in the computing lab or on other systems if you have access to a C++ environment. For each project, you are to demonstrate the project to me, submit a printed copy of all files, and upload your files plus screen shots to the assigned drop-box (multiple files are to be zipped into one file before submitting your project).

Programming assignments will be graded on program correctness, documentation, and style. There will be 3 exams, including the final exam. Each exam focuses on recent material but may also cover material from the beginning of the quarter. The exams will be based on class lectures as well as the textbook and techniques you have used in the related programming assignments.

A final note: Please turn off cell phones while in class.

Tentative Course Schedule

Week	Dates	Topic	Reading
1	M – Jan 5	Syllabus and Course Introduction	Chapter 1
	W – Jan 7	Characterization of Distributed Systems	Chapter 1
2	M – Jan 12	System Models	Chapter 2
	W – Jan 14	System Models + Assignment 1 (5%)	Chapter 2
3	<i>M – Jan 19</i>	<i>Holiday: Martin Luther King's Birthday Observance</i>	<i>No Classes</i>
	W – Jan 21	Networking and Internetworking	Chapter 3
4	M – Jan 26	Inter-process Communication + Assignment 2 (5%)	Chapter 4
	W – Jan 28	Remote Invocation	Chapter 5
5	M – Feb 2	Java RMI + Project 1 released (10%)	Chapter 5
	W – Feb 4	Indirect Communication	Chapter 6
6	M – Feb 9	Operating System Support + Assignment 3 (5%)	Chapter 7
	W – Feb 11	Java Multithreads + Project 2 released (10%)	Chapter 7
7	<i>M – Feb 16</i>	<i>Holiday: George Washington's Birthday Observance</i>	<i>No Classes</i>
	W – Feb 18	Midterm Exam (25%)	
8	M – Feb 23	Middleware – Distributed Objects	Chapter 8
	W – Feb 25	Middleware – Web Services	Chapter 8
9	M – March 2	Middleware – Peer-to-Peer Systems + Assignment 4 (5%)	Chapter 10
	W – March 4	System Services: Security	Chapter 11
10	M – March 9	System Services: Name Services + Assignment 5 (5%)	Chapter 13
	W – March 11	Shared Data: Transactions and Concurrency Control	Chapter 16
11	M – March 16	Shared Data: Concurrency Control + Assignment 6 (5%)	Chapter 16
	W – March 18	Shared Data: Distributed Transactions	Chapter 17
12	M – March 23	Shared Data: Replication	Chapter 18
	W – March 25	Final Exam (25%)	