

**San José State University
College of Engineering,
Department of Computer Engineering
CMPE 273-01, Enterprise Distributed Systems
Spring 2019**

Course and Contact Information

Instructor: Simon Shim, Ph.D.
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Office Hours: M,T 1:30pm – 2:30pm
Class Days/Time: T 3:00pm – 5:45pm
Classroom: ENGR 189
Prerequisites: Java programming, Classified graduate standing, CMPE 272 or instructor consent.

Course Format

Course Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](http://sjsu.instructure.com) at <http://sjsu.instructure.com>. You are responsible for regularly checking with the messaging system through [MySJSU](http://my.sjsu.edu) at <http://my.sjsu.edu> (or other communication system as indicated by the instructor) to learn of any updates.

Course Description (Required)

Introduction to application protocols for large scale distributed systems including object request brokers, asynchronous messaging, and Web services. Lab is based on using protocols to build distributed systems

Course Learning Outcomes (CLO) (Required)

	<i>Description</i>
<i>CLO 1</i>	<i>Understand the distributed programming architecture</i>
<i>CLO 2</i>	<i>Understand techniques involved in programming Web Services</i>
<i>CLO 3</i>	<i>Understand techniques involved in programming Java Messaging Services</i>
<i>CLO 4</i>	<i>Apply distributed communication to distributed software development</i>
<i>CLO 5</i>	<i>Apply critical thinking to the solution of software development problems</i>

Upon successful completion of this course, students will be able to:

Course Learning Objectives Support Program Outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CLO 1	X	X				
CLO 2	X	X				
CLO 3	X	X				
CLO 4		X				
CLO 5		X				

	Description
PO 1	<i>Be able to demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment.</i>
PO 2	<i>Be able to tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies and tools.</i>
PO 3	<i>Be able to demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science and business.</i>
PO 4	<i>Be aware of ethical, economic and environmental implications of their work, as appropriate.</i>
PO 5	<i>Be able to advance successfully in the engineering profession, and sustain a process of life-long learning in engineer or other professional areas.</i>
PO 6	<i>Be able to communicate effectively, in both oral and written forms.</i>

Required Texts/Readings (Required)

Textbook

Recommended

Client/Server Programming with Java and CORBA, Second Edition by Orfali and Harkey (Wiley, 1998) (Electronic version available)

Java Messaging by Eric Bruno (Charles River Media, 2005)

Engineering Wireless Based Software Systems and Applications, J, Gao, S. Shim etc al.

Other Readings

Roy Fiedling, [Architecture Styles and Design of Network based Software](#)

Simon Shim, [The CAP Theorem's Growing Impact](#)

Research papers may be assigned during the course.

Course Requirements and Assignments (Required)

Assignment: Assignments will be given in the form of survey, programming, analysis of tools/techniques, etc.

Quizzes: Quizzes will be given to students during lectures. Questions may include explanation to terms, comparison between different design and technologies, etc.

Exams: One final exam for this course. **There will be no make-up tests.**

Labs: there will be three programming assignments

Project: Students will work in groups on a semester-long project. The purpose of the project is encouraging you to explore the area of database systems, strengthen your understanding, and bring your new findings to the class. You will be required to give a presentation and submit project documents.

Deadlines: Homework and projects are due before class. That means that I will collect all the hardcopies at the beginning of class. Late assignments incur an automatic penalty of 5%, plus 2% per hour for each hour till 9 PM. You will lose a 15% of points for the first day and after the first day, 10% of points for each day. **All late homework MUST be time stamped in order to receive any credit.** Exceptions will be granted only if arranged prior to the due date or a documented illness intervenes.

- Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the [University Syllabus Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) at <http://www.sjsu.edu/senate/docs/S16-9.pdf>.
- Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

Final Examination or Evaluation

Exams: One comprehensive final exam for this course. There will be no make-up tests.

Grading Information (Required)

Grades will be assigned on a curve. Your final grade will be based on assignments, project, exams, and class participation. These will be weighted as follows.

Quizzes and assignments	15%
Labs	30%
Class projects	30%
Final	25%

Determination of Grades

Grade Overall Score

A+ 95-100

A 90-94

B+ 85-89

B 80-84

C+ 75-79

C 70-74

D+ 65-69

D 60-64

F 0-59

Classroom Protocol

You are expected to attend all classes and complete all assigned programming Lab and projects through the course.

University Policies (Required)

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

CMPE 273, Enterprise Distributed Systems

List the agenda for the semester including when and where the final exam will be held. Indicate the schedule is subject to change with fair notice and how the notice will be made available.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	1/29	Course Introduction
2	2/5	Introduction, FTP/ORB, JavaScript
3	2/12	HTTP, REST, NodeJS, Express, Session Mgmt
4	2/19	Mern Stack (Bootstrap, React, JSX)
5	2/26	Mern Stack (Redux)
6	3/5	MySQL/Deployment to AWS/NoSQL DB (MongoDB)
7	3/12	MySQL/Deployment to AWS/NoSQL DB (MongoDB)
8	3/19	Mern Stack (Kafka, Advanced React, Atomic Design)
9	3/26	Message Queues (Kafka Partitions, Cluster, Topics)
10	4/2	Spring Break
11	4/9	Distributed Application using AWS/Redis
12	4/16	Mern Stack (Advanced Redux, GraphQL)
13	4/23	CAP/Web Architecture
14	4/30	Project Presentation
15	5/7	Project Presentation
Final Exam	5/21	May 21, Tuesday 14:45-17:00