

San José State University
Computer Science Department
CS159, Parallel Processing, Section 1, Spring 2020

Course and Contact Information

Instructor:	Robert Chun
Office Location:	MH 413
Telephone:	(408) 924-5137
Email:	Robert.Chun@sjsu.edu
Office Hours:	MW 4:30pm-5:30pm
Class Days/Time:	MW 1500 - 1615
Classroom:	MH222
Prerequisites:	A Computer Architecture Class and An Operating Systems Class

Faculty Web Page

Course materials such as presentation slides, notes, assignments, etc. can be found on my faculty web page at <http://www.sjsu.edu/people/Robert.Chun/courses>

Course Description

A hardware architecture and software development class focused on multi-threaded, parallel processing algorithms and techniques. A detailed study of high-performance parallel processing hardware architectures ranging from on-chip Instruction-Level Parallelism to multi-core microprocessor chips to large distributed supercomputing systems including Clusters, Grids, and Clouds. Discussion and hands-on exercises in a broad range of various parallel programming paradigms and languages such as Pthreads, MPI, OpenMP, Map-Reduce Hadoop, CUDA and OpenCL. The class will focus on the fundamental concepts associated with the design and analysis of parallel processing systems. Special emphasis will be placed on avoiding the unique non-deterministic software defects that can arise in parallel processing systems including race conditions and deadlocks. A term project and oral presentation on a topic selected by the student will be required.

Final Examination

The final exam for the class will be held on Wednesday, May 13, 2020 at 1215-1430

Grading Information

Assignments include two midterms, one final, a written and oral report, a set of projects (consisting of a combination of written problems and programming assignments), and active participation during student presentations, weighted as follows. Grading is based on a class curve. All assignments (especially the oral presentation) must be completed by the student on the due date specified to receive credit for the class. Late assignments (including the scheduled oral presentations) or late exams are not accepted. All students must uphold academic honesty, especially for the required term paper, per university policy detailed at <http://www.sjsu.edu/specialed/docs/current-forms/AcademicIntegrityPolicy.pdf>

15%	Midterm Exam 1 Week 6 (Approximate)
15%	Midterm Exam 2 Week 12 (Approximate)
25%	Written Term Paper/Project & Oral Presentations Weeks 13-15
25%	Final Exam Wednesday, May 13, 2020 at 1215-1430
10%	Combined total of Three HW/Projects Due as announced in class
10%	Active Participation during Student Presentations Due as announced in class

Classroom Protocol

Students are expected to attend all classes, ESPECIALLY THE TERM PAPER ORAL PRESENTATIONS.

