

San Jose State University
Department of Computer Science
CS 218-01 Topics in Cloud Computing Fall 2016

Course and Contact Information

Instructor: Melody Moh
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Office Hours: Mon 1100 to 1150 and Wed 1450 to 1400
Class Days/Time: MW 1330 to 1445
Classroom: MQH 422
Prerequisites: CS 149

Course Format Lecture

Faculty Web Page and MYSJSU Messaging (Optional)

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on my faculty web page <http://www.cs.sjsu.edu/~melody/index.html> and/or on [Canvas Learning Management System course login website](http://my.sjsu.edu) at <http://sjsu.instructure.com>. You are responsible for regularly checking with the email system through [MySJSU](http://my.sjsu.edu) at <http://my.sjsu.edu> to learn of any updates.

Course Description

Topics in cloud computing, including distributed system models, virtual machines, virtualization, cloud platform architectures (IaaS, PaaS, SaaS), service-oriented architectures, cloud programming and software environments, peer-to-peer computing, ubiquitous cloud, cloud security and trust management.

This semester, topics include the following (time permits):

- Introduction
- Parallel and Distributed Systems
- Cloud Infrastructure
- Cloud Computing: Applications and Paradigms
- Cloud Resource Virtualization and Containers
- Cloud Resource Management and Scheduling
- Networking Support and Storage Systems
- Security and Privacy Issues
- IoT and Mobile on Cloud

- Big Data and Cloud Computing
- Fog Computing, Edge Computing, Cloudlets

Course Learning Outcomes (CLO)

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

1. **CLO 1** - Understand the above covered topics through completion of homework, quizzes, and examinations.
2. **CLO 2** - Successfully complete programming projects on advanced cloud computing.
3. **CLO 3** - Work in a (1 or 2 people) team to complete group projects, including independent research, oral presentation, and programming on one latest advancement in cloud computing.

Required Texts/Readings

Required Textbook

- Dan C. Marinescu, Cloud Computing: Theory and Practice, Elsevier Science, 2013
 - SJSU ebook permanent link: http://discover.sjlibrary.org/iii/encore_sjsu/record/C_Rb4556730
 - SJSU ebook Safari version link: http://discover.sjlibrary.org/iii/encore_sjsu/record/C_Rb4562557
 - Slides from the publisher link: <http://booksite.elsevier.com/9780124046276/?ISBN=9780124046276>

Major Reference

- Hwang, Fox, and Dongarra, *Distributed and Cloud Computing*, Morgan Kaufmann, 2012.
 - SJSU ebook: http://discover.sjlibrary.org/iii/encore_sjsu/record/C_Rb4631321
 - URL (Publisher): <http://mkp.com/news/distributed-and-cloud-computing>
 - URL (Amazon): http://www.amazon.com/Distributed-Cloud-Computing-Parallel-Processing/dp/0123858801/ref=sr_1_1?ie=UTF8&qid=1345660685&sr=8-1&keywords=hwang+cloud

Course Requirements and Assignments

Homework is due typewritten (include source code, but not executable files) by class starting time on the due date. Each assigned problem requires a solution and an explanation (or work) detailing how you arrived at your solution. Cite any outside sources used to solve a problem. When grading an assignment, I may ask for additional information. A subset of the assigned problems will typically be graded.

ASSIGNMENTS

Refer the course website for latest information of assignments.

- **HW:** Weekly homework assignments and several in-class quizzes
- **PROJ:** Several hands-on labs, individual and/or group research and programming projects will span the entire semester
- **Oral Presentation:** Included in projects (PROJ)

EXAMS

One mid-term exams (**Mid**) scheduled approximately at the end of 8th week, and a final exam (**FIN**).

Schedule

For continual updates of course schedule, please check the [course web page](http://www.cs.sjsu.edu/~melody/CS218_16F.html) at http://www.cs.sjsu.edu/~melody/CS218_16F.html

CS 218 final exam is scheduled on Thursday, December 15, at 12:15pm.

[Fall 2016 Final Exam Schedule](#) can be found at

<http://info.sjsu.edu/static/catalog/final-exam-schedule-fall.html>

Grading Policy

- *I will determine letter grades for the course, including +/- grades based on*

Percentage	Grade
92 and above	A
90 - 91	A-
88 - 89	B+
82 - 87	B
80 - 81	B-
78 - 79	C+
72 - 77	C
70 - 71	C-
60 - 69	D
59 and below	F

- *Percentage weight [or point value] assigned to various class assignments*
 - HW - 20%, PROJ- 40%, Mid - 20%, FIN - 20%.
- *No make-up exams will be given and no late assignment will be accepted.*

NOTE that [University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states the following:

- *Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.*

Classroom Protocol and Other Notes

- **Always start your email subject with "CS218" to get my attention.**
- The pre-requisite to this course (CS 149) will be monitored.
- **Cheating** will not be tolerable; a ZERO will be given to any cheated assignment/exam, and will be reported to the Department and the University.
- **Wireless laptop** is required. Your laptop must remain closed (preferably in your backpack and not on your desk) until you are informed that it is needed.
- To encourage participation from students, **no** recording is allowed.
- Students must be respectful of the instructor and other students. For example: turn off/silence **cell phones and other mobile devices**.
- Attendance is crucial to doing well on assignments and examinations.
- Students are responsible for all materials distributed and discussed in the class.
- Office hours are on a 90% basis; they may be rescheduled or canceled due to conflicting department/university or other professional meetings.

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/>

CS 218, Fall 2016, Course Schedule

The schedule is subject to change with fair notice; the notice will be made available in class.

Course Schedule

Weeks	Topics
1	Introduction
2	Parallel and Distributed Systems
3	Parallel and Distributed Systems
4	Cloud Infrastructure
5	Cloud Computing: Applications and Paradigms
6	Cloud Computing: Applications and Paradigms
7	Cloud Resource Virtualization and Containers
8	Cloud Resource Management and Scheduling
9	Cloud Resource Management and Scheduling
10	Networking Support and Storage Systems for Cloud Computing
11	Security and Privacy Issues
12	Networking Support and Storage Systems for cloud
13	IoT and Mobile on Cloud
14	Big Data and Cloud Computing
15	Fog computing, edge computing, and cloudlets
16	Review
Final Exam	Thursday, December 15, at 12:15pm