

Topics in Cloud Computing

CS 218

Fall 2026 Section 01 In Person 3 Unit(s) 08/19/2026 to 12/07/2026 Modified 08/18/2026

Contact Information

Mr. Sri Rajagopal

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Lecture: Mon, Wed 7:30 pm - 8:45 pm PST

Lecture room: MacQuarrie Hall 422

Office Hours: After Class: Mon/Wed 8:50pm onwards

Office: Class room

Note: Can meet outside office hours by appointment over zoom

Course Description and Requisites

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.

Prerequisite(s): CS 149 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Letter Graded

Classroom Protocols

Effective in-class participation is crucial to doing well on assignments, quizzes and examinations. Please arrive to class on time and make sure your cell phones are silent during the lecture.

Class time will be spent in interactive lecture. You are required to bring your charged wireless laptop with internet access to class. Your laptop must remain closed except for designated activities.

AI use policy:

AI platforms can be used for research and to work on assignments, but they should never replace your own critical thinking. Students using AI should be transparent about the use in their submission in writing (what tool was used and what it was used for). Submitting AI generated work as your own without acknowledgement is not allowed. Direct reproduction (copy and paste or word for word) from AI tools is not allowed.

AI tools cannot be used for quizzes and exams. Students will require the use of lockdown browser for quizzes and exams.

Academic Integrity Policy

<https://www.sjsu.edu/studentconduct/docs/SJSU-Academic-Integrity-Policy-F15-7.pdf>
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Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

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

- Explain the core concepts of the cloud computing in comparison to data center computing, the motivation, the evolution and models and services enabled by Cloud computing
- Use AWS as an example Cloud Service Provider and learn the operating concepts of cloud computing - IAM, security, global and regional services, console and programmatic management
- Discuss elastic compute, network, storage and virtualization concepts and how it enables cloud computing
- Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems such as Amazon S3, RDS and DynamoDB
- Design scalable and secure cloud architecture for different use cases

Course Materials

- There is no required textbook. Class notes, slides and links to online resources will be posted on class Google drive.

Course material developed by the instructor is the intellectual property of the instructor. Students cannot publicly share or upload instructor generated material for this course such as exam questions, Programming assignment, lecture notes, lecture slides, hands-on exercises or homework solutions without instructor permission.

- For hands on labs / exercises

- Students will require their own computing environment (laptop with enough resources) to run a hypervisor (such as Oracle VirtualBox) and Virtual machine applications
- Students will require their own AWS account (AWS also offers free tier plan for upto 6 months and \$200 credit. Students are encouraged to avail this option). All cloud costs would be the student's responsibility - the school does not pay for it.

Course Requirements and Assignments

Please note the Course Pre-requisites to ensure you are in compliance. The course makes use of lab environments on your laptop and AWS Cloud services. Familiarity with hypervisor (Oracle VirtualBox or similar), Linux virtual machines and python programming language will be needed.

Assignments

Homework assignments and report submissions will be posted and submitted on Canvas. For full credit, they must be submitted by the posted due date and time. A detailed grading rubric is provided for all assignments. Please make sure you read and follow the grading rubric to ensure full credit.

Unless explicitly called out as a team work, assignments are expected to be completed individually as your own original work.

When grading an assignment, I may ask for additional information.

Quizzes

We will have short in-class quizzes throughout the course. The worst 2 quizzes will be dropped for calculation of the final grade. You must be in the classroom and must use the LockDown browser to access and answer the question on Canvas.

Missed quizzes cannot be made up as answers will be discussed in the class.

Midterm Exam

The midterm exam will take place in the classroom during class time on October 28.

Final Exam

The final exam is scheduled according to the SJSU Final Exam Schedule, on Wednesday, Dec 9th 7:45 - 9:45 pm. Please check SJSU schedule (<https://www.sjsu.edu/classes/final-exam-schedule/fall-2026.php>) (<https://www.sjsu.edu/classes/final-exam-schedule/fall-2026.php>) for any updates. The final exam will be cumulative.

Final Project

Students will be graded on a final project that they have to build and demo to the entire class. Students can work in groups - the size of which will be decided later.

Grading Information

Late Assignments Policy:

Late assignments will be accepted with a 1-point penalty for each day or partial day late. Late days include weekend days. For example, an assignment due on Tuesday by 11.59 PM will incur a penalty of 1 point if submitted at 8 AM on Wednesday. No submissions will be accepted more than 2 days late.

Extra-credits and Reworks

No extra-credit assignments or rework opportunities will be given.

Exams:

No make-up exams are given.

Final Credit Weighting:

Assignments (HWs and Reports)	25%
Quizzes	15%
Mid Term Exam	20%
Final Exam	20%
Final Project	20%

Total Points (%)	Grade
>97	A+
93 - 97	A
90 - 93	A-
87 - 90	B+
83 - 87 %	B
80 - 83 %	B-
77 - 80 %	C+
73 - 77 %	C
70 - 73 %	C-

67 - 70 %	D+
63 - 67 %	D
60 - 63 %	D-
0 - 60 %	F

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

The Class schedule will cover the following topics (subject to modifications).

Cloud Computing - Foundations and Service Models
Cloud Architecture and Systems Design
API, API Gateways and Routing
Identity Services, IAM and Authentication
Cloud Networking and Security
Cloud Compute, Serverless and Scalability
Cloud Storage and Databases
Virtualization, Containers and Orchestration
Cloud High Availability and Resiliency
Event driven architectures
AI applications and Cloud Services

Important dates

8/19/2026	Wednesday	First Day of Class
9/7/2026	Monday	Labor Day holiday

10/26/2026	Monday	Project Proposal Due
10/28/2026	Wednesday	Mid Term Exam during Class hours
11/11/2026	Wednesday	Veterans Day Holiday
11/18/2026	Wednesday	Project Submissions Due
11/25/2026	Wednesday	Non Instructional Day (No class)
12/7/2026	Monday	Last Day of Classes
12/9/2026	Wednesday	Final Exam 7:45 pm - 9:45 pm