Topics in Cloud Computing Section 01

CS 218

Spring 2024   3 Unit(s)   01/24/2024 to 05/13/2024   Modified 02/05/2024

👤 Contact Information

Lecturer: Mr. Narayan Balasubramanian

Email: narayan.balasubramanian@sjsu.edu
Office: TBD
Phone: TBD

Office Hours

By appointment only

🕐 Course Information

Lecture

Mon, Wed 9-10:15AM
Science Building # 311

Detailed Schedule

Google Sheet outlining Schedule
(https://docs.google.com/spreadsheets/d/1RvCWe4jvViSU1xr4lmR8hIhsDQzcKRNDGJ4vbDMtyGw/edit?usp=sharing)

🖥️ 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.

✳ Classroom Protocols

You are expected to attend classes. If you cannot attend, it is your responsibility to get a copy of the lecture notes and class announcements from a reliable classmate. The instructor reserves the right to ignore frivolous or inappropriate e-mail inquiries. Students are expected to participate actively to provide improvement to presentations by other classmates.

☷ 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 Goals

The goal of this course is to learn how to deploy, monitor and maintain an application on the cloud. For this course, we will learn how to deploy on AWS. There are quite a few other cloud services providers available, but we will stick with AWS because of their leadership.

� Course Learning Outcomes (CLOs)

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

1. Good understanding of git
2. Learn about Continuous Integration/Continuous Deployment
3. Understand cloud related terminologies like IAAS, PAAS, SAAS etc
4. Use of tools like Docker, Kubernetes, terraform
5. Understand frameworks that allow easy development of Api's
6. Test, deploy and monitor apps
7. Understand how to make apps recover from errors and plan for disaster recovery
8. Understand security issues around app deployment
9. Understand Amazon's suite of cloud related products - AWS, EC3, S3, DBs, ECS etc

📘 Course Materials

There is no prescribed textbook. We will make extensive use of the vast amount of free resources available on the internet.

ᴉ☰ Course Requirements and Assignments

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 syllabus.

1. **Project**: There will a final project that students will have to demo to the entire class. Students can work in groups of at most 3 individuals.
2. **Exams**: There will be one midterm and one final exam.
3. **Quizzes**: There will be 1-2 quizzes and each will be counted as a HW.
4. **Homework**: Each homework is usually centered around an application and has both written and programming parts.
5. **Paper**: Students will have to read published papers and summarize them.

✔ Grading Information

Criteria

Course weightings will be as follows:

- Homework, Quizzes and Paper summaries; 35%
- Project: 25%
- Exams: 20% each.

Exams may be curved (up) to raise their grades if needed. There will be opportunity for extra credit throughout the course

Breakdown

Your course grade will be determined by your final weighted average:

A plus = 97% or higher

A = 93% up to 97%

A minus = 90% to 93%

B plus = 87% to 90%

B = 83% to 87%

B minus = 80% to 83%

C plus = 77% to 80%

C = 73% to 77%

C minus = 70% to 73%

D plus = 67% to 70%

D = 63% to 67%

D minus = 60% to 63%

F = 0% to 60%

Boundary cases count as the higher of the two grades.

🏛 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.