

# CSCI 49378: Introduction to distributed system and cloud computing

*Semester: Spring 2020*

*Last Updated: 2/11/2020*

## Course Information

Instructor: Bonan Liu

Meeting Time: Wednesdays 5:35PM - 8:15PM

Room: ThomHunter 502

Prerequisite: CSCI 23500

Textbook: No Textbook Required. The links to the reading assignment will be published before each lecture.

No midterm exam. No final exam.

## Course Overview

The course's audience is undergraduate-level students who completed courses of CS Fundamentals, Data Structures, Algorithms and and who have learnt at least one major programming language. The course will be conducted mainly in lectures. A final course project needs to be submitted.

The course will be divided into two separate modules. The distributed system module introduces the basic concepts, techniques and patterns in traditional distributed systems. The cloud computing module will leverage Google Cloud Platform (GCP) as the cloud computing platform to learn the skills in the cloud computing world.

## Learning Outcomes

After successfully completing the course, the students should achieve the following goals.

- Understand the basic concepts of distributed systems and cloud computing.
- Be aware of the established patterns of high-performance and large-scalable systems.
- Be able to leverage major cloud computing products to build a service rapidly.
- Be prepared for system design interview questions.

## About Instructor

Bonan Liu

- Tech-In-Residence member, Computer Science Department, Hunter College
- Software Engineer, Google

Email: [bl1579@hunter.cuny.edu](mailto:bl1579@hunter.cuny.edu)

#### Office Hours:

- By appointments only.
- Meet virtually via Google Hangout. <http://bit.do/csci49378-meet>

## Grading

#### Attendance: 8%

- Attendance is required for the course.
- No penalty in grading if the absence is notified in written before the class.

#### Assignments: 32%

- The system design challenges are simulating the system design process in the industry.
- Complete at least 2 of the 4 system design assignments. The highest 2 scores will be used.

#### Group project: 60%

- Each group (2-5 students) will develop a cloud-based service in your preferred language(s). Detailed requirements will be announced separately.
- Grading will be based on
  - design document
  - design presentation
  - final presentation/demo
  - source code
  - peer review

## Proposed Syllabus

Date	Lecture	Note
01/29/2020	Course Overview	
02/05/2020	Key Concepts and Techniques	
02/12/2020	NO CLASS	No classes scheduled per Hunter College calendar.
02/19/2020	Synchronization, Consistency and Replication	Assignment 1
02/26/2020	Distributed File Systems Review Assignment 1	
03/04/2020	Distributed Web-based Applications	Assignment 2
03/11/2020	CANCELLED due to COVID-19	
03/18/2020	NO CLASS	Instructional Recess
03/25/2020	Cloud Computing Concepts	

	Review Assignment 2	
04/01/2020	Final project design presentation	Assignment 3
04/07/2020	Cloud Systems and Infrastructures I	Classes follow Wednesday's schedule per Hunter College calendar.
04/08/2020	NO CLASS	Spring Recess per Hunter College calendar.
04/15/2020	NO CLASS	Spring Recess per Hunter College calendar.
04/22/2020	Cloud Systems and Infrastructures II Review Assignment 3	Assignment 4
04/29/2020	Cloud Storage and Databases	
05/06/2020	Monitoring and Logging Advanced Topics Course Review Review Assignment 4	
05/13/2020	Final Project Presentation	final project submission due on your presentation date.

## Academic Dishonesty and ADA Compliance:

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The college is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/or Learning) consult the Office of AccessABILITY located in Room E1124 to secure necessary academic accommodations. For further information and assistance please call (212- 772- 4857) /TTY (212- 650- 3230).

## Hunter College Policy on Sexual Misconduct

“In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).

b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link: <http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

## Syllabus Change Policy

This syllabus is a guide for the course and is subject to change with advance notice. Any changes will be announced in class and/or posted on Blackboard.