SP 2024 – CSCI 4795/6795 Cloud Computing

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1 General Information

- **Instructor:** In Kee Kim (inkee.kim@uga.edu)
- **Course website:** http://cobweb.cs.uga.edu/kim/classes/S24-CSCI4795-6795/
- **Class meeting time and location:**
  - Tue and Thurs: 5:30 – 6:45 p.m. @BOYD 0328
  - Wed: 5:30 – 6:20 p.m. @BOYD 0328
- **Office Hours/Location:**
  - TBD
  - TBD

2 Course Overview

Cloud has become a de facto computing infrastructure in many business and research organizations to deliver various user-facing, business, and scientific applications to end users. In this course, you will learn the underlying technologies and concepts that create the current cloud computing and infrastructure, and obtain hands-on experience in designing and implementing modern cloud applications.

This is an introductory cloud computing course designed for both senior-level undergraduate students and graduate students. This class will cover the following concepts and topics (tentative):

- Concept and Definition of Cloud Computing
- Virtualization and Data centers
- Cloud Service Models: IaaS, PaaS, SaaS
- Public Clouds, Private Clouds, and Hybrid Clouds
- Cloud Resource Management
- Cloud Infrastructure Management Systems

- Cloud Storage, NoSQL, and Distributed Key/Value Store
- Containers and Microservices
- Container Orchestration Systems like Kubernetes and Docker Swarm
- Cloud Function and Serverless Computing
- Cloud Security
- Cloud IoT, Mobile Clouds
- Edge/Fog Computing, AI at the edge
- Big Data Processing Frameworks – Hadoop, Spark, Storm.

Prerequisite: CSCI 2720 – "Data Structures." In addition, prior knowledge of operating systems, distributed systems, computer architecture, and computer networks will be a plus.

Textbooks: This class does not require a textbook, but there are two optional textbooks/references:

1. *Cloud Computing: Theory and Practice*. Dan Marinescu, 2nd Edition, Elsevier, 2017
2. *Cloud Computing for Machine Learning and Cognitive Applications*, Kai Hwang, MIT Press, 2017

The lecture will be based on the slides provided by the instructor. Also, the students will be required to read research papers and technical documents about cloud computing.

3 Grading

3.1 Distribution

Component	**Undergrad**	**Graduate**
Programming Assignment (4+ assignments)*	40%	30%
Midterm Exam†	20%	20%
Final Exam†	25%	25%
Quiz	10%	10%
In-class Participation	5%	5%
Paper Presentation	–	10%
Total	100%	100%

- ***Late Policy for Programming Assignments:** Less than 24 hours late – 20% penalty. 24 to 48 hours late – 40% penalty. Later than 48 hours – 0 pt.
- *No email submission allowed for Programming Assignments.
- †Both exams are closed-books/notes.
- **Regrade Request:** Within one week of distribution of your grade. After one week, regrade requests will not be considered.

3.2 Grade Cutoffs

This class uses the standard grade cutoffs.

Grade	Range	Grade	Range	Grade	Range
A	[93, 100]	B-	[80, 82]	D+	[67, 69]
A-	[90, 92]	C+	[77, 79]	D	[63, 66]
B+	[87, 89]	C	[73, 76]	D-	[60, 62]
B	[83, 86]	C-	[70, 72]	F	[0, 59]

4 Academic Honesty

All students must follow the Academic Honesty Policy of the University of Georgia. Dishonest behavior will not be tolerated and will result into failing the course. The detailed information of this policy can be found at https://honesty.uga.edu/Academic-Honesty-Policy/. If there are any issues regarding this policy, please contact the instructor immediately.