Cloud Computing

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1 General Information

- Instructor: Sen He (sehe@augusta.edu)

- Course website: D2L

- Class meeting time and location:

  - TBD

- Office Hours/Location:

  - UH131H

  - By appointment via Microsoft Teams

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, FaaS

- Public Clouds, Private Clouds, and Hybrid Clouds

- Cloud Resource Management, and Basic Linux Commands

- 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 1302 – "Principles of Computer Programming II." In addition, data structures, operating systems, distributed systems, computer architecture, and computer networks are not required, but prior knowledge of those courses 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

	Undergrad	Graduate
Programming Assignment (4+ assignments)*	50%	40%
Miderm Exam†	20%	20%
Final Exam†	20%	20%
In-class Participation/Quiz	10%	10%
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. Please submit to D2L.
- †Both exams are open books/notes. The midterm and final exams will be administered face to face in class.
- **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.

Total Points Earned	Final Grade
>= 90	A
80 – 89	B
70 – 79	C
60 – 69	D
< 60	F

4 Academic Honesty

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

5 Coronavirus Information for Students

5.1 Face Coverings

Face coverings are encouraged but not required for those who have been vaccinated. Fully vaccinated individuals can resume classes and most activities without wearing a mask or physically distancing. Unvaccinated individuals are strongly encouraged to continue wearing a face covering while inside campus facilities and continue socially distancing from others when possible. Face coverings continue to be required in medical facilities and on public transportation, including JagExpress shuttles.

5.2 Vaccines

Vaccination is not required. The university continues to encourage vaccination against COVID- 19 for all who are able. The university will host multiple vaccine clinics for students when they return to campus.

5.3 COVID-19 Requirements

The University has implemented specific requirements to minimize exposure to COVID-19 and support the safety of all during the pandemic. These requirements apply to all persons on campus (faculty, staff, students, and visitors). These requirements are subject to change. Visit https://jagwire.augusta.edu/coronavirus/ for the latest details.

6   Academic Accommodations

Augusta University will make reasonable academic accommodations for students with documented disabilities. Students should contact Testing and Disability Services (Galloway Hall; 706.737.1469; www.augusta.edu/tds/) as soon as possible for more information and/or to initiate the process for accessing academic accommodations. "Augusta University believes academically qualified individuals with disabilities should have equal opportunity and access to a quality education. We are actively involved in fostering an environment that encourages full participation by students with disabilities in every segment of the University. The Office of Disability Services was established to help ensure an accessible and positive college experience for students with disabilities. Our Office [Testing and Disability Services] provides a variety of services and accommodations to meet the needs of disability related concerns in accordance with the Rehabilitation Act of 1973 as amended, the Americans with Disabilities Act of 1990, and Board of Regents' policies" https://www.augusta.edu/tds/disabilityservices.php

Accommodations for students with disabilities are made on an Individual basis. Students must register and request services from the Director of Testing and Disability Services. In order to receive services, students must provide current documentation of their disability from a qualified health professional. Appointments can be made by calling The Office of Testing and Disability Services at (706) 737-1469 or by visiting their office located on the first floor of Galloway Hall.

It is the student's responsibility for initiating an appointment and following Augusta University's Accommodation Procedures found at: https://www.augusta.edu/tds/accommodation.php. If the student does not obtain academic accommodations through The Office of Testing and Disability Services, it is assumed no special accommodations or modifications will be necessary to meet the requirements of this course.