GUST | Computer Science Department

CSC 479 Cloud Computing

(3 contact hours – 0 lab hour - 3 credits)

Syllabus

General Information

Instructor	
Office	
Phone / Email	
Class Time / Location	
Office Hours	
Teaching Assistant / email	

Course Description

Foundations of cloud computing and its security. Topics include cloud computing models and deployment types, resource provisioning, cloud economics and pricing, security challenges, and key considerations for cloud migration. The course also covers cloud security approaches, securing accounts and data, and cloud-related legal and social issues.

Course Prerequisites

- Senior standing

Course Category

Elective

Course Outcomes

At the completion of this course, students will be able to:

- Understand cloud computing concepts and models. [SO# 1]
- Analyse cloud service provider's services, economics, and billing. [SO# 1]
- Apply cloud security best practices in designing cloud solutions. [SO# 1 and SO#2]
- Design, implement, and evaluate technical cloud solutions. [SO# 2]

- Evaluate cloud migration and management strategies. [SO# 2, SO# 4]
- Assess legal, ethical, and social impacts of cloud computing. [SO# 4]

Required Textbook

- Anders Lisdorf, Cloud Computing Basics: A Non-Technical Introduction, ISBN: 9781484269213, Apress, March 2021

Supplementary Textbook

- AWS Cloud Security Foundation Course on AWS Academy.

- Michael J. Kavis, "Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS)", Wiley, ISBN-13: 978-1118617618. 2014

Tentative Schedule

WEEK	TOPIC	MATERIAL (CHAPTERS AND/OR OTHER MATERIAL)
1	Syllabus + Cloud Computing: Introduction	1. Cloud Foundations 2. Why Cloud?
2-3	Cloud deployment models	10. Cloud Technology
4-5	Cloud Adoption, Economics and Billing	12. Cloud Economy 14. Adopting the Cloud
6	Cloud Infrastructure: A case study	3. The Genealogy of Cloud Computing
7-10	Cloud Services in action: A case study	13. Working with the Cloud AWS Academy Cloud Foundations Modules 6 to 9.
11-12	Networking and content delivery in the cloud	AWS Academy Cloud Foundations Module 5 -Networking and Content Delivery
13-14	Security for the cloud	11. Securing the Cloud AWS Academy Cloud Foundations Module 5 -Networking and Content Delivery
15	Standards in cloud computing	14. Adopting the Cloud Chapter 5 in Kavis's supplementary book.

Grading Scheme

GRADE CATEGORY	WEIGHT
In-class exercises	10%
Project	30%
Quizzes	10%
Midterm Exam	20%
Final Exam	30%

Academic Honesty

All work presented and submitted in this class must be your own. Submitting work that is not yours is considered cheating and will be subject to the policies of academic honesty at GUST. This includes using text copied from the Internet or other sources, using work generated by AI tools such as ChatGPT, Google's Bard, Bing AI, etc., using materials prepared by a paid agency or individual, using unauthorized help from anyone other than GUST academic staff and approved tutors, or even re-using your own work from other classes and assignments. Remember, anything more than five consecutive words written by someone else can be considered plagiarism and must put in “quotes”, cited in-text, and include an accompanying reference at the end of the paper, as per the course standards. Violating the policy of academic integrity will result in severe consequences, including failing grades, loss of university privileges, and even permanent dismissal.

Commit to Integrity

Academic Dishonesty Policy

1. Academic dishonesty includes such things as cheating, inventing false information or citations, plagiarism and helping someone else commit an act of academic dishonesty. It usually involves an attempt by a student to show possession of a level of knowledge or skill that he/she does not possess.
2. Cheating/plagiarism is absolutely forbidden. Any such misconduct may result in obtaining a zero on the assignment, failure in the course, and/or appropriate referral for disciplinary action.

Inclusion (OSC Accommodation)

I wish to fully include persons with disabilities in this course. Please let me know if you need any special accommodations in the curriculum, instruction, or assessments of this course to enable you to fully participate. I will maintain confidentiality of the information you share with me. If you have a disability that impacts your classroom performance and wish to request an accommodation, contact the One-Stop Student Services Centre (OSC) at N3-101. The OSC requires up-to-date documentation regarding your disability to enable them to comply with your request. Admission of OSC is voluntary and will be handled in a confidential manner. GUST does not discriminate against people with disabilities.