

IS4133: CLOUD COMPUTING AND SERVICES

Effective Term

Semester B 2022/23

Part I Course Overview

Course Title

Cloud Computing and Services

Subject Code

IS - Information Systems

Course Number

4133

Academic Unit

Information Systems (IS)

College/School

College of Business (CB)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to introduce the basic concepts of cloud computing and cloud services, including the cloud architecture, the various service and deployment models, and some existing popular cloud computing platforms. How the cloud provides

an environment for supporting cloud storage and cloud applications is explained. The course also covers cloud security and governance, cloud strategy, and corresponding case discussions.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Understand the basic concepts and characteristics and architecture of cloud computing.	20	x		
2	Explain the various cloud services, deployment models and cloud platforms.	30	x		
3	Describe the services and applications that are built on cloud and their implications to businesses.	20	x	x	
4	Understand the factors involved in formulating a cloud strategy for a business and be able to identify the potential risks with security, privacy and governance issues.	30	x	x	

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)	
1	TLA1:Lecture	Concepts related to fundamentals of cloud computing and its related services and applications are explained by the instructor.	1, 2, 3, 4	Seminar:3 Hours/Week
2	TLA2: Mini-case discussions	Minute cases will be given out in tutorial sessions where the students can apply what they have learnt in lectures to analyze how relevant cloud models and applications are applied.	2, 3, 4	Seminar:3 Hours/Week

3	TLA3:Practical/Workshop	Hands-on skills on applying the theories, knowledge and techniques taught in lectures have to be practiced by students in workshops.	2, 3, 4	Seminar:3 Hours/Week
4	TLA4:Project	The students are required to work on a group project where they relate the cloud computing concepts and applications to a selected business environment.	1, 2, 3, 4	Seminar:3 Hours/Week

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1 AT1: Group Project and Tutorial Participation This will comprise of a group project (20%) and tutorial participation (20%). A group project, which includes a project report and presentation, will be designed to let students apply the knowledge acquired in the course to propose a cloud strategy for a selected business.	1, 2, 3, 4	40	
2 AT2: Mid-term Quiz This test is to be held at mid-term to assess the students' understanding on the basic concepts half way through the course. This is an individual mark.	1, 2, 3	10	

Continuous Assessment (%)

50

Examination (%)

50

Assessment Rubrics (AR)**Assessment Task**

AT1: Group Project and Tutorial Participation

Criterion

CILO 1-4 Tutorial Participation: Ability to demonstrate active participation in class and tutorial sessions and discussions and often ask and answer questions.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT1: Group Project and Tutorial Participation

Criterion

CILO1-4Project Report:Ability to demonstrate a good understanding of the basic concepts of cloud computing Ability to demonstrate in-depth thought and research has been made in discovering how to apply the knowledge learnt in class to the projectAbility to demonstrate the report has covered all the specified requirementsAbility to demonstrate the report is well-structured, well-written and well presented.Ability to demonstrate a fair contribution to the project

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT1: Group Project and Tutorial Participation

Criterion

CILO1 - 4Project Presentation:Ability to demonstrate a good understanding of the concepts and knowledge taught by the presenters. Ability to demonstrate that the presentation is well-structured and presented in a logical sequence. Time control is good. PowerPoint slides are of high quality.Ability to demonstrate that the team is able to tackle all/most of the questions raised.Ability to demonstrate excellent presentation skills and language skillsAbility to demonstrate appropriate use of visual aids in presentation

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT2:Mid-term Quiz

Criterion

CILO1 - 3Ability to demonstrate an in-depth understanding of what cloud computing is and its associated services and applications.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT3:Final Examination

Criterion

CILO1 Ability to demonstrate a good understanding of the basic concepts and characteristics and architecture of cloud computing.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT3:Final Examination

Criterion

CILO2 Ability to explain the various cloud models and the current popular cloud platforms.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT3:Final Examination

Criterion

CILO3 Ability to demonstrate an understanding of the services and applications that are built on cloud and their implications to businesses.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

AT3:Final Examination

Criterion

CILO4 Ability to demonstrate a good understanding of the factors involved in formulating a cloud strategy for a business and be able to identify the potential security, privacy and governance issues.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Characteristics of cloud computing; Cloud computing concepts & technologies: load balancing, scalability, elasticity, replication etc.; Cloud service models: Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS), public, private, hybrid & multi-cloud environment; Cloud computing platforms: AWS, GCS, Azure; Cloud services, DevOps, Cloud storage, Cloud security and governance, cloud strategy.

Reading List**Compulsory Readings**

Title	
1	Cloud Computing: Master the Concepts, Architecture and Applications with Real-world Examples and Case Studies by Kamal Kant Hiran , Ruchi Doshi , et al.
2	Clouonomics: The Business Value of Cloud Computing 1st Edition by Weinman, 2012.

Additional Readings

Title	
1	Cloud Computing for Dummies, 2nd Edition by Judith S. Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper, Aug 2020.
2	Cloud Computing Solutions Architect: A Hands-on Approach: A Competency-based Textbook for Universities and a Guide for AWS Cloud Certification and Beyond by Arshdeep Bahga and Vijay Madiseti, Jul 2019.
3	Cloud Computing: Concepts, Technology & Architecture (The Pearson Service Technology Series by Thomas Erl, Zaigham Mahmood, Ricardo Puttini), May 2013.
4	Ahead in the Cloud: Best Practices for Navigating the Future of Enterprise IT, 1st Edition by Stephen Orban, 2017.
5	Cloud Computing: Principles and Paradigms, 1st Edition by Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, 2011.