City University of Hong Kong
Course Syllabus

offered by Department of Information Systems
with effect from Semester B 2022 / 2023

Part I Course Overview

Course Title:	Cloud Computing and Services
Course Code:	IS4133
Course Duration:	One Semester
Credit Units:	3
Level:	B4
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

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.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Understand the basic concepts and characteristics and architecture of cloud computing.	20	✓		
2.	Explain the various cloud services, deployment models and cloud platforms.	30	✓		
3.	Describe the services and applications that are built on cloud and their implications to businesses.	20	✓	✓	
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	✓	✓	
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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 self-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.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if applicable)
		1	2	3	4	
TLA1: Lecture	Concepts related to fundamentals of cloud computing and its related services and applications are explained by the instructor.	✓	✓	✓	✓	Seminar: 3 Hours/Week
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.		✓	✓	✓	
TLA3: Practical/Work shop	Hands-on skills on applying the theories, knowledge and techniques taught in lectures have to be practiced by students in workshops.		✓	✓	✓	
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.	✓	✓	✓	✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Indicative of likely activities and tasks students will undertake to learn in this course. Final details will be provided to students in their first week of attendance in this course.

Assessment Tasks/Activities	CILO No.				Weighting*	Remarks[#]
	1	2	3	4		
Continuous Assessment: 50%						
AT1: Group Project and Tutorial Participation This will comprise of a group project (25%) and tutorial participation (15%). 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.	✓	✓	✓	✓	40%	
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.	✓	✓	✓		10%	
Examination: 50% (duration: one 2-hour exam)						
AT3. Final Examination Students will be assessed via the examination on their understanding of concepts learned in class, textbooks, reading materials, and their ability to apply subject-related knowledge.	✓	✓	✓	✓	50%	
** The weightings should add up to 100%.*					100%	

[#] Remark: Students must pass BOTH coursework and examination in order to get an overall pass in this course.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task (AT)	**Criterion**	**Excellent (A+, A, A-)**	**Good (B+, B, B-)**	**Fair (C+, C, C-)**	**Marginal (D)**	**Failure (F)**
AT1: Group Project and Tutorial Participation	CILO 1-4 Tutorial Participation: Ability to demonstrate active participation in class and tutorial sessions and discussions and often ask and answer questions.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	CILO1-4 Project 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 project • Ability to demonstrate the report has covered all the specified requirements • Ability to demonstrate the report is well-structured, well-written and well presented. • Ability to demonstrate a fair contribution to the project	High	Significant	Moderate	Basic	Not even reaching marginal levels
	CILO1 - 4 Project 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 skills • Ability to demonstrate appropriate use of visual aids in presentation	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT2: Mid-term Quiz	CILO1 - 3 Ability to demonstrate an in-depth understanding of what cloud computing is and its associated services and applications.	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT3:	CILO1	High	Significant	Moderate	Basic	Not even

Final Examination	Ability to demonstrate a good understanding of the basic concepts and characteristics and architecture of cloud computing.					reaching marginal levels
	CILO2 Ability to explain the various cloud models and the current popular cloud platforms.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	CILO3 Ability to demonstrate an understanding of the services and applications that are built on cloud and their implications to businesses.	High	Significant	Moderate	Basic	Not even reaching marginal levels
	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.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information

1. Keyword Syllabus

(An indication of the key topics of the course.)

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.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Cloud Computing by Sandeep Bhowmik, 2017.
2.	Cloudonomics: The Business Value of Cloud Computing 1st Edition by Weinman, 2012.

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	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 Madisetti, Jul 2019.
2.	Cloud Computing: Concepts, Technology & Architecture (The Pearson Service Technology Series by Thomas Erl, Zaigham Mahmood, Ricardo Puttini), May 2013.
3.	Ahead in the Cloud: Best Practices for Navigating the Future of Enterprise IT, 1st Edition by Stephen Orban, 2017.