

**City University of Hong Kong
Course Syllabus**

**offered by Department of Information Systems
with effect from Semester A 2021 / 2022**

Part I Course Overview

Course Title:	<u>Blockchain Technology and Business Applications</u>
Course Code:	<u>IS6200</u>
Course Duration:	<u>One Semester (13 weeks)</u>
Credit Units:	<u>3</u>
Level:	<u>P6</u>
Medium of Instruction:	<u>English</u>
Medium of Assessment:	<u>English</u>
Prerequisites: <i>(Course Code and Title)</i>	<u>Nil</u>
Precursors: <i>(Course Code and Title)</i>	<u>Nil</u>
Equivalent Courses: <i>(Course Code and Title)</i>	<u>Nil</u>
Exclusive Courses: <i>(Course Code and Title)</i>	<u>Nil</u>

Part II Course Details

1. Abstract

The course will cover blockchain technologies, distributed ledger technology, cryptocurrencies (e.g., Bitcoin), and their applications, implementation and security concerns. Students will learn how these systems work; analyse the security and regulation issues relating to blockchain technologies; and understand the impact of blockchain technologies on financial services and other industries.

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.	Explain the concepts of cryptocurrency, blockchain, and distributed ledger technologies	20%			
2.	Analyse the application and impact of blockchain technology in the financial industry and other industries	30%	✓	✓	
3.	Evaluate security issues relating to blockchain and cryptocurrency	25%	✓	✓	
4.	Design and analyse the impact of blockchain technology in other markets	25%			
		100%			

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, frameworks, and technologies of blockchain and cryptocurrency are explained.	✓		✓				
TLA2: Cases studies	Students are required to analyse how blockchain technology be used in different industries and evaluate its impact on businesses.	✓	✓	✓	✓			
TLA 3: Online discussion	It is a means of self-reflection and sharing concepts, techniques, and methods of knowledge management among students within or after formal classes.	✓	✓	✓	✓			

4. Assessment Tasks/Activities (ATs)

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

Assessment Tasks/Activities	CILO No.				Weighting	Remarks
	1	2	3	4		
Continuous Assessment: 60%						
<u>AT1: Participation</u> Students should participate in class activities, such as small group discussions and presentations, self-reflection, raise and answer questions, and the like. Class participation is used to assess students' understanding of the topics and their abilities to apply the knowledge and concepts taught in class.	✓	✓	✓	✓	10%	
<u>AT2: Individual Assignments</u> Students will answer questions and solve problems in the area of blockchain technologies and applications.	✓	✓	✓	✓	20%	
<u>AT3: Group Project</u> A group project is developed to allow students to apply the concepts and tools learned in the course via hands-on experiences. A project report with two parts, project plan (10%) and project outcome (20%), will be required to illustrate the achievements of the group project that develops blockchain technologies and/or applications.	✓	✓	✓	✓	30%	
Examination: 40% (duration: one 2-hour exam)						
<u>AT4: Examination</u> A 2-hour exam will be given to assess the capability of the students in terms of conceptual understanding and analytical skills in blockchain-related subjects that have been covered in the course through lectures, readings, and exercises.	✓	✓	✓	✓	40%	
					100%	

Note: 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	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
AT1: Participation	Ability to accurately analyze a given blockchain technology and business application and recommend relevant improvements with justification.	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT2: Individual Assignments	Capability to accurately apply a blockchain framework and a method to develop all the relevant artifacts at different modeling levels.	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT3: Group Project	Ability to accurately identify and assess all the relevant governance and management issues in implementing blockchain solutions to an organization.	High	Significant	Moderate	Basic	Not even reaching marginal levels
AT4: Examination	Capability to analyse and propose innovative and feasible blockchain solutions by making use of emerging technologies to support an organizational information sharing strategies.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

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

Blockchain technology, data blocks, internet of money, cryptocurrency, bitcoin, decentralization, peer-to-peer network, distributed ledger, security, privacy regulation, banking, financial services, applications in businesses, new business models, entrepreneurship

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.	Tiana Laurence, IBM – Blockchain for Dummies (240 pages), 01 May 2017, John Wiley & Sons Inc., New York, United States
2.	Antony Lewis, The Basics of Bitcoins and Blockchains: An Introduction to Cryptocurrencies and the Technology that Powers Them (Cryptography, Crypto Trading, Digital Assets, NFT), 15 September 2018, Mango.

2.2 Additional Readings

Additional references for students to expand their knowledge about the subject will be distributed in class.

2.3 Online Resources:

Readings will be augmented by pertinent journal/newspaper/magazine articles.

- Updated booklist in July2021