



Course Specification

(Bachelor)

Course Title: Cryptocurrencies and Blockchain

Course Code: APFT2509

Program: Diploma in Fintech

Department:

College: The applied College

Institution: Umm Al-Qura University

Version: First

Last Revision Date: 8 April 2025



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A. General information about the course:

1. Course Identification

1. Credit hours: (3)

3

2. Course type

- A. ☐ University ☐ College ☒ Department ☐ Track ☐ Others
- B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: 2/3)

4. Course General Description:

This course offers an in-depth exploration of cryptocurrencies and blockchain technologies, focusing on their architecture, use cases, and the economic and regulatory environments in which they operate. Topics include decentralized ledgers, smart contracts, consensus mechanisms, crypto wallets, and tokenomics. Students will also examine legal, ethical, and cybersecurity aspects while engaging with real-world platforms and blockchain tools

5. Pre-requirements for this course (if any):

None

6. Co-requisites for this course (if any):

None

7. Course Main Objective(s):

Upon completion of the course, students will be able to:

1. 1. Explain the principles and components of blockchain technology.
2. 2. Describe the evolution, mechanics, and types of cryptocurrencies.
3. 3. Analyze security, regulatory, and ethical challenges in blockchain adoption.
4. 4. Demonstrate the use of blockchain platforms and smart contracts.
5. 5. Evaluate real-world applications and future trends of blockchain and crypto systems.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom 		





No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	2 * 15 = 30
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Identify the core concepts of blockchain and cryptocurrency systems.	K1	Interactive lectures, visual aids, and guided discussions.	Exams, Participation, Group Project
1.2	Describe the architecture, protocols, and governance of decentralized ledgers.	K2	Case-based teaching and instructor-led concept breakdowns.	Exams, Participation, Group Project
1.3	Understand regulatory, economic, and security considerations in crypto adoption.	K3	Lectures, Seminars and analysis of current regulatory cases.	Exams, Participation, Group Project





Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.0	Skills			
2.1	Analyze and design basic smart contracts using blockchain tools.	S1	Lectures, using tools	Exams, Participation, Group Project
2.2	Interpret real-time blockchain data using public platforms.	S2	Lectures, Assignments,	Exams, Participation, Group Project
3.0	Values, autonomy, and responsibility			
3.1	Apply ethical reasoning in dealing with blockchain systems and crypto finance.	V1	Discussion, Assignments	Group Discussions, Group Project
3.2	WorkDemonstrate responsibility in data and wallet security.	V2	Discussion, Assignments	Group Discussions, Group Project

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Blockchain and Cryptocurrency	3
2	History and Evolution of Bitcoin and Altcoins	3
3	Blockchain Structure and Consensus Mechanisms	6
4	Wallets, Transactions, and Keys	6
5	midterm exam	3
6	Smart Contracts and Decentralized Applications (DApps)	6
7	Ethereum and Other Blockchain Platforms	3
8	Crypto Mining and Energy Consumption	3
9	Legal and Regulatory Issues in Cryptocurrencies	3
10	Cryptocurrency Trading, Exchanges, and Tokenomics	3
11	Cybersecurity Risks and Ethical Implications	3
12	NFTs and Metaverse: Beyond Traditional Crypto	3
Total		45



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam	6	25%
2.	Group Project	12	20%
3.	Individual Homework	6	5%
4.	Participation	Ongoing	5%
5.	Final Exam	TBD	45%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<i>Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). Bitcoin and Cryptocurrency Technologies. Princeton University Press.</i>
Supportive References	<ul style="list-style-type: none"> - Tapscott, D., & Tapscott, A. (2016). Blockchain Revolution. Portfolio. - Mougayar, W. (2016). The Business Blockchain. Wiley.
Electronic Materials	- World Economic Forum reports on blockchain
Other Learning Materials	<ul style="list-style-type: none"> - Blockchain.com Explorer - Ethereum.org Documentation - CoinMarketCap.com

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Projector – Smart board – Computer



Items	Resources
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students - Faculty	Indirect
Effectiveness of Students assessment	Faculty	Indirect
Quality of learning resources	Students - Faculty	Indirect
The extent to which CLOs have been achieved	Faculty	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Umm Al-Qura University Council
REFERENCE NO.	851281214463/194460
DATE	1447/01/20

