



KINGDOM OF SAUDI ARABIA
 IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
 COLLEGE OF COMPUTER AND INFORMATION SCIENCES
 INFORMATION SYSTEMS DEPARTMENT
 BACHELOR IN INFORMATION SYSTEMS

المملكة العربية السعودية
 جامعة الإمام محمد بن سعود الإسلامية
 كلية علوم الحاسب والمعلومات
 قسم نظم المعلومات
 بكالوريوس نظم المعلومات

SYLLABUS

IS1382: Fundamental of blockchain

CREDIT HOURS	3 credit hours (Lectures: 3)	PREREQUISITE	IS1250
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Instructor:
Contact information and office hours
Office No: To be announced (TBA)
Office Hours: TBA
E-mail: _____@imamu.edu.sa

COURSE DESCRIPTION
<p>It introduces theoretical and implementation aspects of blockchain technology, which contains all the necessary material to become a blockchain technical expert.</p> <p>It includes an in-depth insight into the need for decentralization, smart contracts, consensus both permissioned and permissionless, and various blockchain development frameworks, tools, and platforms such as Ethereum, Bitcoin, and Hyperledger Fabric.</p>

COURSE LEARNING OUTCOMES (CLOs)		Aligned SOs
1	Knowledge and Understanding	
1.1	Understand the blockchain technology	1(I)
1.2	Investigate the adoption and implementation of blockchain	1(P)
1.3	Understand the features of blockchain	1(P)
1.4		
1.5		
2	Skills :	
2.1	Interpret the requirements of a blockchain system	2(P)
2.2	Develop a blockchain system	2(A)



2.3	Apply the subject area's tools and techniques	2(A)
2.4		
2.5		
3	Values:	
3.1	Work effectively in groups and exercise leadership when appropriate	5(P)
3.2	Communicate effectively in oral and written form	3(P)
3.3		
3.4		
3.5		

TEACHING Strategies

Lectures
Self-Learning

N o	List of Topics	Contact Hours	Self- Learning
1	Introduction to Blockchain Technology	3	
2	Decentralization and Architecture of Blockchain Technology	3	
3	Cryptographic Primitives for Blockchain Development	6	2
4	Smart Contracts for Building Decentralized Applications	3	
5	Distributed Consensus for Permissionless Environment	3	
6	Mining Procedure in Distributed Consensus	3	
7	Distributed Consensus for Permissioned Blockchain	3	
8	Consensus Scalability in Blockchain Network	3	
9	Building Trust in Blockchain Network Using Collective Signing	3	2
10	Adoption of Blockchain in Enterprise Computing	3	2
11	Project Discussions	3	
12			
Total		36	6

TEXT BOOK

Blockchain Technology: From Theory to Practice (Studies in Autonomic, Data-driven and Industrial Computing) 1st ed. 2022 Edition
by Sudeep Tanwar (Author)

REFERENCES



Recent Advances in Blockchain Technology: Real-World Applications (Intelligent Systems Reference Library, 237) 1st ed. 2023 Edition
by Sandeep Kumar Panda (Editor), Vaibhav Mishra (Editor), Sujata Priyambada Dash (Editor), Ashis Kumar Pani (Editor)

Course Assessment Methods			
No	Assessment Method	Due Week	% of Total Assessment
1	Quiz	4	10
2	Assignment	9	10
3	Midterm	7	20
4	Project / Lab Exam	11	20
5	Final Exam	13	40