GLOBAL SUMMER PROGRAMME 2024

IS452S BLOCKCHAIN APPLICATIONS IN ASIA-PACIFIC'S FINANCIAL SERVICES

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A. COURSE DESCRIPTION

This course explores blockchains and smart contracts in the context of financial services and in particular in Asia-Pacific. The fundamentals of blockchains and smart contracts are first explained and then the similarities and differences of public and private blockchains are shown. Various blockchain platforms are considered as well as the end-to-end implementation of a range of services, for example supply chain financing. Emphasis is placed throughout the course on analysing real-world situations using case studies and gaining hands-on experience with financial systems. Guest speakers from companies using blockchains and blockchain vendors will be joining certain classes to share their experiences.

B. LEARNING OBJECTIVES

By the end of the course, students will be able to:

- Understand finance customers and the financial services they need.
- Explain the benefits and challenges of using of blockchains in financial services.
- Implement common blockchain strategies as used in financial services.
- Understand smart contracts and their use cases in different areas of finance.
- Describe common attacks on blockchain applications.
- Apply system management strategies within the Asian context

C. PRE-REQUISITES / REQUIREMENTS / MUTUALLY EXCLUSIVE COURSES (IF ANY)

This course does not require any pre-requisite.

D. ASSESSMENT METHODS / GRADING DETAILS

Type of Assessment	Weight
Individual Assessment • 2 graded quizzes (10% each)	20%
Course Project (Teams) • Create a business case and blockchain solution • Present solution in a video	30%
Individual Assessment • Final Exam	50%
Total	100%

E. ACADEMIC INTEGRITY

All acts of academic dishonesty (including, but not limited to, plagiarism, cheating, fabrication, facilitation of acts of academic dishonesty by others, unauthorized possession of exam questions, or tampering with the academic work of other students) are serious offences.

All work (whether oral or written) submitted for purposes of assessment must be the student's own work. Penalties for violation of the policy range from zero marks for the component assessment to expulsion, depending on the nature of the offense.

When in doubt, students should consult the instructors of the course. Details on the SMU Code of Academic Integrity may be accessed at http://www.smuscd.org/resources.html.

F. ACCESSIBILITY

SMU strives to make learning experiences accessible for all. If students anticipate or experience physical or academic barriers due to disability, please let the instructor know immediately. Students are also welcomed to contact the university's disability services team if they have questions or concerns about academic provisions: included@smu.edu.sg.

Please be aware that the accessible tables in the seminar room should remain available for students who require them.

G. INSTRUCTIONAL METHODS AND EXPECTATIONS

Instructional Method	Expectations
Lecture: Total 12	Student must attend and participate in the seminar-room lectures / Video Meeting
In class individual and team activities	Students are expected to submit the results of the activities
Use cases	Non-graded class activities to help students gain understanding of blockchain applications.
Team Project	Document and video presentation

H. CLASSROOM POLICIES

As required per Singapore Management University

I. IMPORTANT ASSIGNMENT DATES

1. Quizzes: Lesson 5 and 10
2. Team Project / Presentations: Lesson 11
3. Final exam: Lesson 12

J. CONSULTATIONS

Consultation scheduled via email

K. RECOMMENDED TEXT / READING LIST / CASE STUDIES LIST

- Financial Services Technology – Processes, Architecture and Solutions, Randall E. Duran, (2013) Cengage Learning
- The Basics of Bitcoins and Blockchains: An Introduction to Cryptocurrencies and the Technology that Powers Them Hardcover, Antony Lewis
- Class notes, articles, and references

LESSON PLAN	
LESSONS	**TOPICS**
LESSON 1 Tuesday 25 June	• Course outline • Blockchain fundamentals • Ex: Blockchain advantages
LESSON 2 Wednesday 26 June	• Customers and products • Pain points and opportunities • Ex: KYC and AML
LESSON 3 Thursday 27 June	• Smart contracts fundamentals • dApp design and maintenance • Ex: Attack vectors
LESSON 4 Tuesday 2 July	• Banking in International Trade • Ex: Centralised vs decentralised trade finance
LESSON 5 Wednesday 3 July	• Web 3.0 and DeFi • Metaverse • Ex: Virtual existence ASSESSMENT: Quiz 1
LESSON 6 Thursday 4 July	• DLT platforms • Ex: Platform choice scenario
LESSON 7 Tuesday 9 July	GUEST SPEAKER: Satheesh Kumar, Kratos CEO (date TBC) • Ex: Case scenario for SMPs
LESSON 8 Wednesday 10 July	• IT solutioning • Ex: Solution case study

LESSON 9 Thursday 11 July	• 2008 Credit Crisis • Ex: Case study for the impact of DLT on GFCs
LESSON 10 Tuesday 16 July	• DLT Future • Ex: Project time ASSESSMENT: Quiz 2
LESSON 11 Wednesday 17 July	Video Presentations with Q&A
LESSON 12 Thursday 18 July	ASSESSMENT: Final Exam