

Blockchain Technology and Digital Finance

Department: Fudan International Summer Session 2026

Course Code	MF70036						
Course Title	Blockchain Technology and Digital Finance						
Credit	2	Experiment (including Computer) Credit		Practice Credit		Aesthetic Education Credit	
Credit Hours Per Week	9 credit hours per week. 36+3 tutorial hours in total (one credit hour is 45 minutes)	Education on The Hard- Working Spirit Credit Hours		Language of Instruction	English	Honors Course	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Course Type	<input type="checkbox"/> Core General Education Course <input type="checkbox"/> Specific General Education Course <input type="checkbox"/> Basic Course in General Discipline <input checked="" type="checkbox"/> Others			2+X Major :			
				<input type="checkbox"/> Professional Core Course <input type="checkbox"/> Professional Advanced Course Non 2+X Major : <input type="checkbox"/> Professional Compulsory Course <input type="checkbox"/> Professional Elective Course			
Course Objectives	Upon completion, students will: 1) Master blockchain core principles (distributed ledgers, consensus mechanisms, smart contracts) and their reshaping of trust/value networks; 2) Evaluate applications, business logic, and risks of digital currency, DeFi, CeFi, asset securitization, and cross-border payments; 3) Understand China's "technology encouragement, financial prudence" framework and key policies while comparing global regulatory strategies; 4) Conduct multi-dimensional analyses of major events (FTX collapse, Ethereum Merge, digital RMB pilot) to develop independent judgment; 5) Gain hands-on experience creating and managing digital assets on Ethereum testnet, understanding private key custody, gas fees, smart contract interaction, and on-chain transparency.						

Course Description	Master's course on blockchain and digital finance via global cases. Covers digital currency, payments, asset digitization; aligns with China's 14th Five-Year Plan/e-CNY, comparing HK, US, Singapore, Dubai regulations for global perspective.			
<p>Course Requirements:</p> <p>Prerequisites: Students are expected to have a fundamental background in Intermediate Microeconomics, Intermediate Macroeconomics, and Finance. Basic knowledge of Python programming is preferred, but not required.</p>				
<p>Teaching Methods:</p> <ul style="list-style-type: none"> • Lectures (40%): Systematic instruction on core theories and knowledge frameworks. • Case Studies (30%): In-depth discussions on key cases each week, with student participation encouraged. • Company Visits (10%): 2-3 company visits planned, providing opportunities to share insights with industry experts from blockchain technology companies, cryptocurrency exchanges, and digital technology research institutes. The planned visits include Hashkey Exchange, Shanghai Blockchain Association, Singapore DBS Bank Shanghai Headquarters and public blockchain Conflux Network (CFX). • Lab Sessions (10%): Dedicated lab sessions to guide students in practical technical work. • Group Projects (10%): Students work in groups to complete an in-depth industry research project or innovative application solution. 				
<p>Course Director's Academic Background:</p> <p>Dr. Dennis Sun is a distinguished scholar and practitioner specializing in the digital economy, blockchain technology, and financial regulatory technology. He currently serves as a Visiting Professor at the School of Economics, Fudan University , and holds a Doctor of Business Administration (DBA) from Durham University.</p> <p>Dr. Sun has authored several influential monographs that bridge technical architecture with business logic:</p> <ol style="list-style-type: none"> 1. Deep Understand Blockchain (2022): Analyzes blockchain integration through socio-technical systems. 2. New Era of Digital Currency (2024): Comprehensive guide to Hong Kong’s VASP and stablecoins. 3. Start-Up in the Metaverse (2025): Explores Web3.0, DAO governance, and AIGC integration. <p>He also holds a suite of prestigious advisory and academic appointments, including:</p> <ul style="list-style-type: none"> • Honorary Advisor of the Asian Blockchain Institute. • Expert Committee Member of the "Sci-Tech China" New Quality Productivity Technology Service Group. • Distinguished Expert of the Shanghai Distributed Consensus Technology Association. • Think Tank Expert of the Shanghai Blockchain Technology Association. • Innovation & Entrepreneurship Mentor at Xidian University. • Senior Advisor of the Donghua University Blockchain Laboratory. 				
Instructor's Academic Background:				
Members of Teaching Team				
Name	Gender	Professional Title	Department	Responsibility

Xiaohan Sun	Male	Adjunct Professor	School of Economics	Main lecturer

Course Schedule:

Module 1 Foundation and Principles: The Reconstruction of Trust Mechanisms and the Birth of Digital Assets

Week 1 –Day 1

Sections 1-2: Course Framework and Overview of the Digital Finance Revolution. In-depth analysis of the Bitcoin white paper, dissecting its core ideas for solving the double-spending problem and decentralized trust.

Section 3: Overview of the Blockchain Technology Stack: Distributed ledger, cryptography (hashing, asymmetric encryption), and consensus concepts. Discussion of the economic and sociological implications of the technology.

Week 1 –Day 2

Sections 4-5: In-depth explanation of the principles, security models, and energy consumption controversies of PoW and PoS mechanisms.

Section 6: Case study: Ethereum merger—the technical implementation, economic impact, and industry paradigm shift of the transition from PoW to PoS.

Week 1 –Day 3

Sections 7-8: Smart Contract Principles and Ethereum Virtual Machine (EVM) Basics. This section focuses on analyzing the financial innovations and new risks (code vulnerabilities) brought about by automated execution.

Section 9: Case Study: The DAO Incident—A Crisis and Hard Fork (ETH/ETC) Triggered by Early Smart Contract Vulnerabilities, exploring the ethical and legal dilemmas of decentralized governance.

Week 2-Day 1

Module 2 Ecosystem and Market: An Analysis of DeFi, CeFi, and Industrial Applications

Sections 10-11: Characteristics, Valuation Logic, and Market Structure of Cryptocurrencies as an Asset Class. Introduction to Token Standards (ERC-20, ERC-721).

Section 12: An Initial Exploration of the Global Regulatory Landscape: A Comparison of China's "Chain-Token Separation" Prudent Framework with Differentiated Regulatory Paths in the United States, Hong Kong, Singapore, and Other Regions.

Week 2-Day 2

Sections 13-14: Core Components of DeFi: Decentralized Exchanges (DEXs), Lending Protocols, and Stablecoin Mechanisms, focusing on the Automated Market Maker (AMM) model.

Section 15: Case Study: Uniswap and "DeFi Summer"—How Liquidity Mining Drives Innovation and Bubbles, exploring the composability and systemic risks of DeFi.

Week 2-Day 3

The planned visits Hashkey Exchange

Week 3-Day 1

Sections 16-17: The technical and economic principles of three types of stablecoins (fiat-backed, crypto-backed, and algorithmic stablecoins).

Section 18: Case study: The Terra/Luna crash—deconstructing the "death spiral" of algorithmic stablecoins

and comparing the compliance paths of Tether (USDT) and Circle (USDC).

Week 3-Day 2

Sections 19-20: The role, business model, and connection of CeFi (exchanges, custody, wealth management) with traditional finance.

Section 21: Case study: The FTX crash – a comprehensive analysis of corporate governance failure, runaway risk, and regulatory gaps, and its global impact.

Week 3-Day 3

Module 3 Technical Experiments (Lab Session)

Experiment Project: Digital Asset Lifecycle Simulation – Experience the entire process of digital asset creation, management, and simple DeFi interaction on the Ethereum.

Objective: To gain a deep understanding of private key self-custody, gas fees, smart contract interaction, and on-chain data transparency.

Evaluation: Scoring will be based on the completeness of the experiment report, the correctness of the operation, and the depth of reflection.

The planned visits public blockchain Conflux Network (CFX).

Week 4-Day 1

Module 4 Policy, Governance and Global Comparison

Sections 25-26: Evolution of China's Blockchain and Crypto Asset Regulatory Framework—A systematic review of the policy trajectory from the 2013 Bitcoin risk announcement to the 2021 crackdown on cryptocurrency "mining" transactions. A key focus is on interpreting the "Regulations on the Management of Blockchain Information Services" and the "14th Five-Year Plan" for the digital economy, understanding the core orientation of "empowering the real economy."

Section 27: Discussion of Compliance Practices—An analysis of the challenges and opportunities of digital asset applications in areas such as cross-border trade and judicial evidence preservation.

Week 4-Day 2

Sections 28-29: A Comparison of Regulatory Models in International Financial Centers—Similarities and Differences between Hong Kong's VASP Licensing System and Singapore's "Regulatory Sandbox," and Global Virtual Asset Center Strategies.

Section 30: Challenges and Enforcement Cases from Multiple US Regulatory Agencies (SEC, CFTC) (e.g., SEC vs. Ripple), and Dubai's (VARA) Specific Legislation and Opening-up Strategy.

Week 4-Day 3

Module 5 Summary, Outlook and Results Presentation

Sections 31-32: The course systematically connects the knowledge base under the theme of "The Evolution of Trust and the Future of Finance," exploring future trends such as CBDC, DeFi compliance, and Web3.0, while reiterating the wisdom of balancing technological innovation and financial stability. Course summary and Q&A follow.

Group Presentation : Each group will present their final research report and defend it (20 minutes presentation + 10 minutes Q&A per group). The research should demonstrate solid case analysis, policy interpretation, and independent academic insights.

The planned visits Singapore DBS Bank Shanghai Headquarters

The design of class discussion or exercise, practice, experience and so on:

Week 1 – Case Study analysis report

Week 2 – Case Study analysis report

Week 3 – Experiment Report

Week 4 – submit Group presentation keynote

If you need a TA, please indicate the assignment of assistant: Seeking a bilingual TA to coordinate 2–3 corporate site visits. This role is ideal for a university student proficient in both English and Chinese, and can Handle professional communication and outreach to host companies; Organize visit timelines, ensuring alignment between academic schedules and corporate availability; Assist with on-site coordination to ensure smooth operations during industry tours.

Grading & Evaluation:

Attendance (5%): Excellent (5 pts): Perfect attendance, no tardiness; Good (4 pts): Attendance rate $\geq 90\%$, ≤ 1 absence with valid reason; Average (3 pts): Attendance rate $\geq 80\%$, all absences with formal leave; Poor (0-2 pts): Attendance rate $< 80\%$ or unexcused absences

Participation (10%): Excellent (9-10 pts): Actively initiates discussions, raises high-quality questions/insights, connects theory with cases; Good (7-8 pts): Frequently participates, logical contributions, good understanding; Average (5-6 pts): Occasional participation, correct but superficial points; Poor (0-4 pts): Rarely participates or off-topic remarks

Assignments/Experiments/Practice (25%):

- a. Individual Assignments (15%): Two policy/case analysis briefs (750-1000 words each). Excellent (13-15 pts): In-depth analysis, rigorous logic, original insights, proper writing; Good (11-12 pts): Complete analysis, accurate understanding, clear structure; Average (9-10 pts): Meets basic requirements, adequate analysis; Poor (0-8 pts): Superficial analysis, incomplete content, or significant errors.
- b. Technical Experiment Report (10%): Complete Ethereum experiment. Excellent (9-10 pts): Correct operations, comprehensive report, profound reflections; Good (8 pts): Error-free operations, well-structured report; Average (6-7 pts): Fulfills basic requirements; Poor (0-5 pts): Operational errors or missing report

Discussion (5%): Excellent (5 pts): Well-prepared, deep analysis, critical thinking with constructive feedback; Good (4 pts): Adequate preparation, active participation, reasonable viewpoints; Average (3 pts): Basic preparation, can participate; Poor (0-2 pts): Unprepared or unable to engage effectively

Group Project Assessment (55%): Excellent (49-55 pts): Clear structure, in-depth case analysis, strong teamwork, fluent delivery, insightful Q&A responses; Good (40-48 pts): Complete content, solid analysis, good coordination, clear presentation, good Q&A performance; Average (31-39 pts): Basically complete, evidence-based analysis, competent delivery, correct Q&A answers; Poor (0-30 pts): Disorganized structure, superficial analysis, poor team coordination or inadequate defense preparation.

Usage of Textbook: Yes (complete textbook information form below) No

Textbook Information (No more than two textbooks) :

Title	Author	ISBN	Publishing Time	Publisher	Type I	Type II
					<input type="checkbox"/> Self-compiled Textbook (Published) <input type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published)	<input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level Planning Textbook <input type="checkbox"/> Others
					<input type="checkbox"/> Self-compiled Textbook (Published) <input type="checkbox"/> Non-mainland Textbook <input type="checkbox"/> Other Textbook (Published)	<input type="checkbox"/> National Planning Textbook <input type="checkbox"/> Provincial and Ministerial Planning Textbook <input type="checkbox"/> School Level Planning Textbook <input type="checkbox"/> Others

Teaching Materials & References:

N/A