

Syllabus(2022-2nd semester)

Course	Blockchain Application	Department	Cyber Security	Office Hours	
Course No. and Class	38487-01	Hours	3.0	Academic Credit	3.0
Professor	Jongkil Kim		Office		
Telephone			E-MAIL		
Value of competence	Pursuit of Knowledge(80), Creative Convergence(20)		Keyword	blockchain, Distributed ledger, Cryptocurrency	

1. Course Description

This subject is designed to introduce the fundamentals of blockchain systems and their applications. The content of the subject will include some important theories needed to understand blockchain systems and their applications. It also includes a discussion on cybersecurity issues.

2. Prerequisites

There are no prerequisites for this subject.

3. Course Format

Lecture	Discussion/Presentation	Experiment/Practicum	Field Study	Other
90%	10%	0%	0%	0%

- explanation of course format :

The students may need to present their project outcomes in the classes.

4. Course Objectives

By successfully completing this subject, the students can get a solid understanding of core theoretic principles needed to understand blockchain systems. Those will include cryptographic mechanisms and consensus algorithms that are essential to understanding blockchain systems. Therefore, the students may enable to discuss and understand the ongoing issues in blockchain systems and their applications including their cybersecurity issues.

5. Evaluation System

* Absolute evaluation

Midterm Exam	Final Exam	Quizzes	Presentation	Projects	Assignments	Participation	Other
30%	30%	0%	0%	20%	10%	10%	0%

* Evaluation of group projects may include peer evaluations.

- explanation of evaluation system

6. Required Materials

No textbook is needed for this subject.

7. Supplementary Materials

Bitcoin: A Peer-to-Peer Electronic Cash System (2008) by Satoshi Nakamoto

8. Optional Additional Readings

<https://ethereum.org/>

9. Course contents

Week	Date	Topics, Materials, Assignments
Week 1	2022/09/02(FRI)	Subject Overview
	2022/09/06(TUE)	Preliminaries
Week 2	2022/09/09(FRI)	추석 연휴
	2022/09/13(TUE)	Preliminaries
Week 3	2022/09/16(FRI)	Introduction to Blockchain
	2022/09/20(TUE)	Introduction to Blockchain
Week 4	2022/09/23(FRI)	Bitcoin and Cryptocurrency
	2022/09/27(TUE)	Bitcoin and Cryptocurrency
Week 5	2022/09/30(FRI)	Hashcash and proof-of-work
	2022/10/04(TUE)	Hashcash and proof-of-work
Week 6	2022/10/07(FRI)	More on Bitcoin
	2022/10/11(TUE)	More on Bitcoin
Week 7	2022/10/14(FRI)	Ethereum and Smart Contract
	2022/10/18(TUE)	Ethereum and Smart Contract
Week 8	2022/10/21(FRI)	Proof-of-stake and other consensus algorithms
	2022/10/25(TUE)	Proof-of-stake and other consensus algorithms
Week 9	2022/10/28(FRI)	Midterm Exam, Introduction to project
	2022/11/01(TUE)	Midterm Exam, Introduction to project
Week 10	2022/11/04(FRI)	NFT (Non-fungible Tokens)
	2022/11/08(TUE)	NFT (Non-fungible Tokens)
Week 11	2022/11/11(FRI)	Ripple and private blockchain
	2022/11/15(TUE)	Ripple and private blockchain
Week 12	2022/11/18(FRI)	Discussion on Stable Coins
	2022/11/22(TUE)	Discussion on Stable Coins
Week 13	2022/11/25(FRI)	Applications of blockchain
	2022/11/29(TUE)	Applications of blockchain
Week 14	2022/12/02(FRI)	Applications of blockchain
	2022/12/06(TUE)	Project presentation (I)
Week 15	2022/12/09(FRI)	Project presentation (II)
	2022/12/13(TUE)	Concluding lectures and discussion
Week 16	2022/12/16(FRI)	Final Exam
	2022/12/20(TUE)	

10. Course Policies

* For laboratory courses, all students are required to complete lab safety training.

11. Special Accommodations

* According to the University regulation #57, students with disabilities can request special accommodation related to attendance, lectures, assignments, and/or tests by contacting the course professor at the beginning of semester. Based on the nature of the students' requests, students can receive support for such accommodations from the course professor and/or from the Support Center for Students with Disabilities (SCSD).

* The contents of this syllabus are not final—they may be updated.