Syllabus(2024-2nd 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	Jinseonmi-gwan 225	
Telephone	4253		E-MAIL	jongkil@ewha.ac.kr	
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 that are necessary to understand blockchain systems and their applications. This subject also will include discussions on cybersecurity issues in blockchain systems.

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 in this subject may need to present their project outcomes during the classes.

4. Course Objectives

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

5. Evaluation System

* Absolute evaluation

Midterm Exam	Final Exam	Quizzes	Presentation	Projects	Assignments	Participation	Other
30%	40%	0%	0%	10%	15%	5%	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	2024/09/03(TUE)	Subject Overview
	2024/09/06(FRI)	Preliminaries
Week 2	2024/09/10(TUE)	Preliminaries
	2024/09/13(FRI)	Introduction to Blockchain
Week 3	2024/09/17(TUE)	Chuseok (Korean Thanksgiving Day)
	2024/09/20(FRI)	Bitcoin and Cryptocurrency
Week 4	2024/09/24(TUE)	Bitcoin and Cryptocurrency
	2024/09/27(FRI)	Hashcash and proof-of-work
Week 5	2024/10/01(TUE)	Temporary Holiday - Armed Forces Day
	2024/10/04(FRI)	More on Bitcoin
Week 6	2024/10/08(TUE)	More on Bitcoin
	2024/10/11(FRI)	Ethereum and Smart Contract
Week 7	2024/10/15(TUE)	Ethereum and Smart Contract
	2024/10/18(FRI)	Proof-of-stake
Week 8	2024/10/22(TUE)	Proof-of-stake
	2024/10/25(FRI)	Other consensus algorithms
Week 9	2024/10/29(TUE)	Midterm Exam
	2024/11/01(FRI)	NFT (Non-fungible Tokens)
Week 10	2024/11/05(TUE)	NFT (Non-fungible Tokens)
	2024/11/08(FRI)	Private blockchain
Week 11	2024/11/12(TUE)	Private blockchain
	2024/11/15(FRI)	Discussion on Stable Coins
Week 12	2024/11/19(TUE)	Discussion on Stable Coins
	2024/11/22(FRI)	Blockchain Applications
Week 13	2024/11/26(TUE)	Blockchain Applications
	2024/11/29(FRI)	Other topics in blockchain systems.
Week 14	2024/12/03(TUE)	Project presentation (I)
	2024/12/06(FRI)	Project presentation (II)
Week 15	2024/12/10(TUE)	Subject Summary
	2024/12/13(FRI)	Final Exam
Makeup Classes 1	2024/09/19(THU)	Introduction to Blockchain
Makeup Classes 2	2024/10/02(WED)	Hashcash and proof-of-work

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.