OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES

COURSE SYLLABUS FORM

BUS414- Blockchain Technology and Cryptocurrencies							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Blockchain Technology and Cryptocurrencies	BUS 414	7	3	0	0	3	3

Language of Instruction	English
Course Status	Elective
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Question-Answer, Problem Solving, Teamwork, Case study, Project Development

Course Objective

The aim of this course is for students to have knowledge about blockchain and cryptocurrencies, which have started to take place in our lives with the developing technology, learn the differences between classical, digital and cryptocurrencies, create their own cryptocurrencies with blockchain technology and to develop skills.

Learning Outcomes

The students who succeeded in this course will be able;

1. Knowledge of blockchain technology and cryptocurrencies,
2. To learn how cryptocurrencies are produced with blockchain technology,
3. To learn where and how Bitcoin and similar cryptocurrencies are used,
4. Having an idea about how cryptocurrencies can change our lives in the future,
5. To have an idea about the trend of trade in the world towards cryptocurrencies,
6. They are expected to gain skills in creating and developing their own cryptocurrencies.

Course Outline
The blockchain is regarded as the next revolutionary technology after the Internet, which will transform every part of life. This course will introduce the fundamental building blocks of blockchain technology as well as its application in cryptocurrencies, stablecoins, decentralized finance and non-fungible tokens (NFTs). Blockchain technology within the scope of the course, network types, consensus algorithms, security and attacks, blockchain platform examples in the world and in Turkey, things to know about cryptocurrencies, cryptocurrency mining, production and development of cryptocurrencies, digital literacy, digital wallet, the place of cryptocurrencies in international trade, ICO (Initial Coin Offering), digital currency supply applications will be made. Within the scope of the course, students will be told how to produce their own crypto money, project tasks will be given to produce and develop their own tokens, and the lessons will be supported with cases.

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Blockchain history, definition, stages and operation Peer-to-Peer Electronic Cash System	– Introduction to the course – Course Syllabus and requirements – Blockchain network structure – Blockchain 1.0, 2.0, 3.0 – Blockchain features
2	Blockchain consensus algorithms, Smart Contracts	– Proof of Work – Proof of Stake – Proof of Burn – Proof of History – Proof of Authority – Delegated proof of stake – Byzantine fault tolerance
3	Blockchain network types, hash value, Merkle trees	– Public Blockchain – Private Blockchain – Consortium
4	Blockchain advantages and disadvantages and risks	– Digital identity – Decentralization – Immutability – Traceability – Scalability – Data storage

5-6	Application areas of blockchain technology case examples	– Education – Business management – Operation and production management – Logistics and supply chain – Manufacturing – Energy – Robotics – Tourism – Accounting, auditing and finance
7	Decentralized finance and economics Currency and cryptocurrencies, token and coin differences, Fintech Stablecoins and oracles	– Bitcoin – Decentralized Apps, EVM, and the Ethereum blockchain – Ripple – Corda – Hyperledger – EOS, – IOTA – Monero
8	**MIDTERM EXAM**	
9	Obstacles encountered in blockchain technology, security, privacy and attacks	– Computing power – Application mechanisms – DDOS – Sybil attack – Distributed service attack – Finney attack – Vector76 attack – Brute force attack etc.
10-11	Trends and opportunities in blockchain technology, Programming in solidity, social tokens and online communities	– NFT – WEB 3.0 – DEFİ, – DEX, – ICO, – Metaverse – Tokenization
12	Passive income earning methods, Cryptocurrency trading considerations Programming in solidity,	– Staking – Farming – Digital literacy – Technical analysis of stock market – Exchange formations

13	Cryptocurrency exchanges, Programming in solidity,	– Opening an account on exchanges from scratch, – Making transfers between exchanges – Applications of trading on different exchanges – Examples of secure wallets and vaults – Examples of payment processing tools – How to accept payments in cryptocurrencies?
14-15	Whitepaper writing and project development Programming in solidity,	– Developing projects to create a blockchain platform for different sectors – ICO examples developed by students – Student presentations of their final projects
16	**FINAL EXAM**	

Textbook(s)/References/Materials:
Textbook: Vigna P., Casey J., Michael (2016), The Age of Cryptocurrency: How Bitcoin and the Blockchain Are Challenging the Global Economic Order P, Picadur.
Supplementary References: Bitcoin: A Peer-to-Peer Electronic Cash System, by Satoshi Nakamoto https://bitcoin.org/bitcoin.pdf Bitcoin Developer Guide section: Wallets https://decentralizedthoughts.github.io/2020-12-22-what-is-a-merkle-tree/
Other Materials: https://docs.soliditylang.org/en/latest/

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab		
Class participation and performance	**1**	**5**
Field Study		
Course-Specific Internship (if any)		
Quizzes / Studio / Critical		
Homework		
Presentation		
Projects	1	10
Report	1	5
Seminar		
Midterm Exam/Midterm Jury	**1**	**30**
General Exam / Final Jury	**1**	**50**
Total		**100**
Success Grade Contribution of Semester Studies		**50**
Success Grade Contribution of End of Term		**50**
Total		**100**

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week): 16 x totalcourse hours)	14	3	42
Laboratory			
Application			
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class	14	1	14
Presentation / Seminar Preparation			
Projects	1	5	5
Reports	1	5	5
Homework			
Quizzes / Studio Review			
Preparation Time for Midterm Exams / Midterm Jury	1	14	14
Preparation Period for the Final Exam / General Jury	1	40	40
Total Workload	**(120/30 = 4)**		**120**
ECTS	**4**		

Relationship Between Course Learning Outcomes and Program Competencies						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	To learn blockchain technology and cryptocurrencies,					X
LO2	To learn how cryptocurrencies are produced with blockchain technology,					X
LO3	To learn where and how Bitcoin and similar cryptocurrencies are used,					X
LO4	Having an idea about how cryptocurrencies can change our lives in the future,					X
LO5	To have an idea about the trend of trade in the world towards cryptocurrencies,					X
LO6	To gain the ability to create and develop their own Cryptocurrencies.					X

Relationship Between Course Learning Outcomes and Program Competencies									
No	**Program Competencies**	**Learning Outcomes**							**Total Effect (1-5)**
		LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**		
1	Have advanced theoretical and up-to-date knowledge in discipline-specific areas such as international trade, finance, logistics, and general business and international business such as economics, marketing, management, accounting.	X		X	X	X	X	5	
2	Evaluate, follow, absorb and transfer new information in the field of international trade.	X	X	X	X			4	
3	Conduct market research, carry out projects and develop strategies for a business to open up to international markets.	X			X		X	3	
4	Use knowledge of national and international trade law and legislation in the management of international commercial operation processes.		X	X		X	X	4	
5	Work independently and within an organization, using the knowledge and skills acquired in the field and adopting continuous learning.		X	X	X	X	X	5	
6	Have the ability to apply her theoretical knowledge in real life, with the experience she will gain through practice in departments such as marketing, accounting, foreign trade, finance, logistics.	X	X	X		X	X	5	
7	Have the theoretical knowledge to carry out export, import, customs clearance, logistics, taxation and other international trade activities within the scope of global and regional commercial and economic organizations.		X	X	X	X	X	5	
8	Can develop a business idea, commercialize the business idea, and design and manage their own venture using their entrepreneurial knowledge.	X	X		X	X	X	5	
9	Using strategic, critical, innovative and analytical thinking skills, actively take part in the decision-making processes of the enterprise in the field of foreign trade and finance.	X		X	X	X		4	
10	Act in accordance with ethical values, respectful to the environment, social and universal values in all activities it will carry out in its field.	X	X	X		X	X	5	
11	Have the skills to follow up-to-date information at national and international level, to gather information about field, and to communicate with international institutions / organizations using her/him knowledge of English.	X	X	X	X	X		5	
12	Gain professional competencies to take charge in national and international businesses, public and private sector organizations	X			X	X	X	4	
13	Can evaluate the problems and conflicts encountered in all areas related to international trade from different perspectives with a holistic approach and produce value-based solutions.	X	X	X		X	X	5	
Total Effect									59

Policies and Procedures
Web page: https://www.ostimteknik.edu.tr/uluslararasi-ticaret-ve-finansman-bolumu-209 **https://www.ostimteknik.edu.tr/international-trade-and-finance-232**
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types,i.e. open-ended questions, which can also be in the form of problems or multiple-choice questions.The case could also be carried to the Dean's Office for additional disciplinary action.
Assignments: Quizzes and Homework (Assignments) might be applicable. Scientific Research Ethics Rules are very important while preparing assignments. The students should be careful about citing any material used from outside sources and reference them appropriately.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. The medical report must be from a state hospital.
Projects: Not applicable
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.