Vocational School / Computer Programming

2024 - 2025 Academic Year

FUNDAMENTALS of BLOCKCHAIN TECHNOLOGY

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
FUNDAMENTALS of BLOCKCHAIN TECHNOLOGY	BPR2113185	Fall Semester	3+0	3	5

Prerequisites Courses	
Recommended Elective Courses	
Language of Instruction	Turkish
Course Level	Short Cycle (Associate's Degree)
Course Type	Elective
Course Coordinator	Lect. Beyza KOYULMUŞ
Name of Lecturer(s)	Lect. Beyza KOYULMUŞ
Assistant(s)	
Aim	The aim of this course is to provide information about the basic structure of the technology and the development of applications that will create the economy and trust mechanism of the future by examining existing applications together with blockchain technology and infrastructure.
Course Content	This course contains; Introduction to Blockchain Technology,Developments leading to the emergence of blockchain,Blockchain-focused applications,Blockchain working logic,Blockchain structures, working principles and mining,Digital Coins and other applications,Bitcoin minig and game theory,Blockchain mechanism Cryptology and Hashing,Smart Contract Systems and Applications,Developing a trust and barter system,NFT history,Current NFTs and application areas,Oracles and Metaverse concepts,Web 3.0 and Play-win.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
Understands the working logic of blockchain	10, 16, 9	A, E
Have an idea about blockchain applications	10, 16, 9	A, D, G
Explains the concepts of metaverse and NFT	10, 16, 9	A, E, F, G
Defines Bitcoin minig and game theory	10, 16	A, E, G, H
Explains the concepts of Cryptology and Hashing	10, 16, 9	A, E

Teaching Methods	10: Discussion Method, 16: Question - Answer Technique, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam, D: Oral Exam, E: Homework, F: Project Task, G: Quiz, H: Performance Task

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Introduction to Blockchain Technology	
2	Developments leading to the emergence of blockchain	
3	Blockchain-focused applications	
4	Blockchain working logic	
5	Blockchain structures, working principles and mining	
6	Digital Coins and other applications	
7	Bitcoin minig and game theory	
8	Blockchain mechanism Cryptology and Hashing	
9	Smart Contract Systems and Applications	
10	Developing a trust and barter system	
11	NFT history	
12	Current NFTs and application areas	
13	Oracles and Metaverse concepts	
14	Web 3.0 and Play-win	

Evaluation Methods	**Weight(%)**
Midterm Exam	40
General Exam	60

Resources
Lesson NotesAntonopoulos, A. M. (2017). Mastering Bitcoin: Programming the open blockchain. " O'Reilly Media, Inc.".