

CUBD1091: Introduction to Blockchain

Lab No.	Lab Title
1	Hash Your First Block – Blockchain Basics and Setup
2	SHA-256 in Action – Cryptographic Hashing
3	ECDSA Workshop – Digital Signatures Demo
4	Build the Network – Peer-to-Peer Simulation
5	Mine It – Basic Proof-of-Work Simulation
6	PoW vs PoS – Consensus Mechanism Comparison
7	Stake Your Claim – Proof of Stake Simulation
8	Explore the Chain – Using a Blockchain Explorer
9	Wallet on Testnet – Set Up and Transact
10	Tokenomics 101 – Analyzing Crypto Economics
11	Blockchain in Supply Chains – Use Case Analysis
12	Build a Use Case – Tokenized Supply Chain Prototype
13	Security First – Understanding Blockchain Attacks
14	Project Build I – Blockchain Design and Coding
15	Project Build II – Validation and Node Simulation
16	Final Demo – Blockchain Project Testing & Presentation

CUBD1092: Cryptocurrencies and Smart Contracts

Lab No.	Lab Title
1	Crypto Timeline – Evolution of Digital Currencies
2	Wallet Walkthrough – Hands-on Wallet Setup
3	Know Your TX – Dissecting a Transaction
4	ERC-20 Basics – Tokenization Concepts
5	Hello Solidity – Writing First Smart Contract
6	Blockchain Dev Tools – Setting Up Environment
7	Token Launch – Deploying a Token Locally
8	Contract QA – Testing Smart Contracts
9	Audit 101 – Smart Contract Vulnerabilities
10	Frontend Connect – Web3.js Integration
11	UI for DApps – Building a DApp Frontend
12	Mobile-Ready – Cross-Platform DApp Awareness
13	Chains Beyond Ethereum – Platform Comparisons
14	Project Design – Smart Contract Architecture
15	Project Build – Implementation & Testing
16	Demo Day – Final DApp Integration & Review

CUBD1093: Blockchain Development

Lab No.	Lab Title
1	Dive into Ethereum – Clients and EVM
2	Solidity Patterns – Advanced Inheritance
3	Smart Libraries – Libraries and Proxy Contracts
4	Team Dev – Git and Collaboration in Projects
5	Truffle vs Hardhat – Dev Environment Showdown
6	React Start – DApp Frontend Scaffolding
7	Web3 Connect – Contract Calls via Frontend
8	Talk to the World – Backend and Oracle Integration
9	Debugging Deep – Using Hardhat Console & Logs
10	Peer Audit – Contract Security Review
11	Gas Race – Optimizing Smart Contract Efficiency
12	Multi-Chain Deploy – BSC or Layer 2 Experience
13	Layer 2 Bridge – Explore Optimism/zkSync
14	Project Ideation – DApp Concept & Planning
15	Project Build – Core DApp Development Sprint
16	Launch & Show – Final Testing and Presentation

CUBD1094: Web3 and Decentralized Technologies

Lab No.	Lab Title
1	Web2 vs Web3 – Debate and Redesign
2	Read the Chain – Web3.js Basics
3	Connect the Dots – Ethers.js and MetaMask UI
4	Store with IPFS – Decentralized File Upload
5	Try DeFi – Using Uniswap or Aave Testnets
6	Build DeFi – AMM or Lending Prototype
7	Mint it Yourself – NFT Creation and Deployment
8	Build a Market – Basic NFT Marketplace Logic
9	GameFi Idea Jam – Brainstorming Blockchain Games
10	DAO in Action – Governance Simulation
11	Decentralized Identity – DID and Credential Demo
12	Cross the Chain – Bridge or Interoperability Demo
13	Future Now – AI + Web3 Research Presentations
14	Project Proposal – Write & Peer Review
15	Project Development – Code and Integrate
16	Project Demo – Final Testing and Showcase

CUBD1095: Advanced Blockchain Concepts and Development

Lab No.	Lab Title
1	Architecture Deep Dive – Explore Blockchain Types & Consensus
2	Solidity Pro – Advanced Patterns and Inheritance
3	Proxy in Practice – Using Libraries and Upgradable Contracts
4	GitFlow for Blockchain – Version Control & Collaboration
5	Truffle vs Hardhat II – Framework Comparison & Deployment
6	UI Reloaded – Frontend React App with Web3 Integration
7	Web3 Live – Calling Contracts from React with MetaMask
8	Bring the Data – Backend Integration & Simulated Oracle
9	Hunt the Bug – Debugging with Hardhat Tools
10	Code Audit Swap – Peer Security Review with Slither
11	Optimize the Gas – Code Optimization and Gas Profiling
12	Go Cross-Chain – Multi-Chain Deployment Experience
13	Into Layer 2 – Bridging and Exploring L2s
14	Final Project – Ideation, Planning and Architecture
15	Final Project – Build Sprint with Peer Support
16	Final Demo – Testing, Feedback and Live Presentation