

Blockchain & Web3

EDUCATIONAL COURSE



Course Title

Mastering Blockchain, Smart
Contracts, DeFi, NFTs & Web3 –
From Fundamentals to Advanced
Trading





Course Overview

This comprehensive course is designed to provide learners with a deep understanding of blockchain technology, Ethereum Virtual Machine (EVM), smart contracts, decentralized finance (DeFi), NFTs, DAOs, and trading on both demo and live VDA (Virtual Digital Asset) accounts.

The course is structured into four modules, progressing from beginner to advanced levels, ensuring a smooth learning curve.

Module 1:

Blockchain Fundamentals & Smart Contracts

Duration: 2 Weeks

Topics Covered-

- **Introduction to Blockchain**
 - What is Blockchain?
 - How does Blockchain work?
 - Types of Blockchains (Public, Private, Consortium)
 - Consensus Mechanisms (PoW, PoS, DPoS, PoA)
- **Ethereum & EVM (Ethereum Virtual Machine)**
 - What is EVM?
 - How Smart Contracts Work
 - Gas Fees & Transaction Lifecycle
- **Solidity Programming Basics**
 - Writing Your First Smart Contract
 - Deploying on Testnet (Goerli, Sepolia)
 - Interacting with Contracts using Remix IDE
- **Decentralized Applications (DApps) & Web3**
 - What are DApps?
 - Web3.js & Ethers.js Basics
 - Connecting DApps to MetaMask

Module 2: Decentralized Finance (DeFi) & Trading

Duration: **3 Weeks**

Topics Covered-

- **Decentralized Exchanges (DEX) vs. Centralized Exchanges (CEX)**
 - How DEXs Work (Automated Market Makers - AMM)
 - Popular DEXs: Uniswap, PancakeSwap
 - Liquidity Pools (LP) & Yield Farming
- **Adding & Removing Liquidity**
 - How Liquidity Pools Work
 - Impermanent Loss Explained
 - Calculating LP Returns
- **Staking & Yield Farming**
 - Proof-of-Stake (PoS) vs. Mining (PoW)
 - Staking on Ethereum 2.0, Binance Smart Chain
 - Risks & Rewards of Yield Farming
- **VDA Trading – Demo & Live Accounts**
 - Setting Up a Demo Trading Account
 - Understanding Order Types (Market, Limit, Stop-Loss)
 - Transitioning to Live Trading

Module 3: NFTs, DAOs, and DePIN



Duration: **2 Weeks**

Topics Covered-

- **Non-Fungible Tokens (NFTs)**
 - What are NFTs?
 - Minting & Selling NFTs (OpenSea, Rarible)
 - NFT Smart Contracts (ERC-721, ERC-1155)

- **Decentralized Autonomous Organizations (DAOs)**
 - What is a DAO?
 - Governance Tokens & Voting
 - Popular DAOs (MakerDAO, Aave, Uniswap)

- **DePIN (Decentralized Physical Infrastructure Networks)**
 - What is DePIN?
 - Examples (Helium, Filecoin)
 - Incentive Mechanisms

Module 4:

Advanced Trading & Security Best Practices



Duration: 1 **Weeks**

Topics Covered-

- **Advanced Trading Strategies**
 - Arbitrage Opportunities in DeFi
 - Leverage & Derivatives Trading
 - Risk Management in Crypto Trading
- **Security & Auditing**
 - Common Smart Contract Vulnerabilities (Reentrancy, Overflow)
 - How to Audit Smart Contracts
 - Protecting Your Wallet (Cold vs. Hot Wallets)
- **Final Project: Build & Deploy a Full DApp**
 - Integrate Smart Contract + Frontend (React.js)
 - Deploy on Testnet & Mainnet
 - Demo Trading Simulation

THANK YOU

Thank You

Dive Deeper into Blockchain & Web3 and build the decentralized future — together.

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