

Lab Session: Wallet Setup and First Transaction

BSc Blockchain, Crypto Economy & NFTs

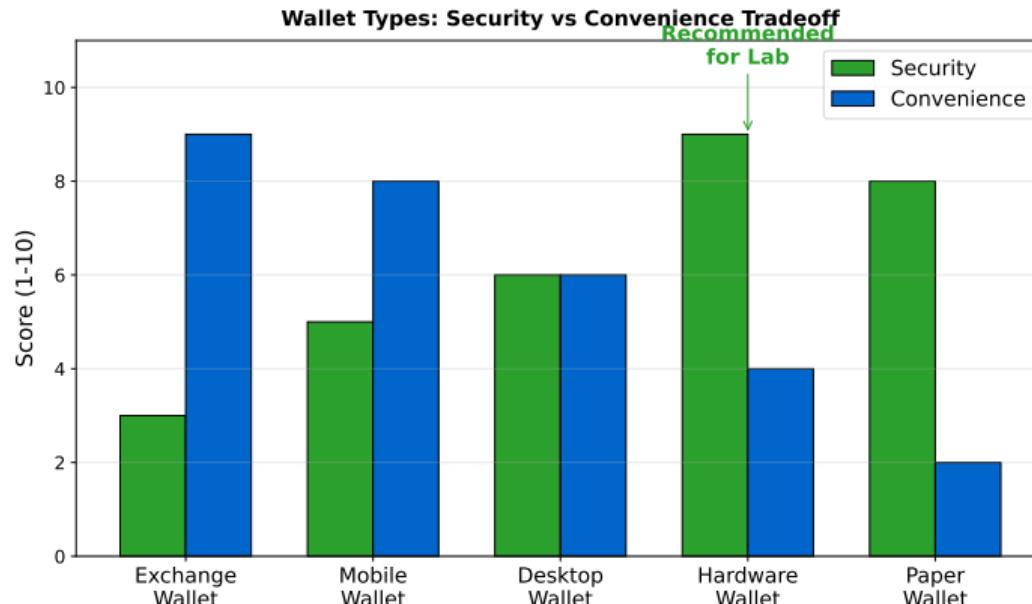
Course Instructor

Module A: Blockchain Foundations

By the end of this lab session, you will be able to:

- Install and configure MetaMask wallet extension
- Understand seed phrase importance and backup procedures
- Connect to Ethereum testnets (Sepolia)
- Obtain testnet ETH from faucets
- Send and receive testnet transactions
- Apply security best practices for wallet protection

Wallet Types: Security vs Convenience



Hardware wallets offer best security; MetaMask provides good balance for learning

What is MetaMask?

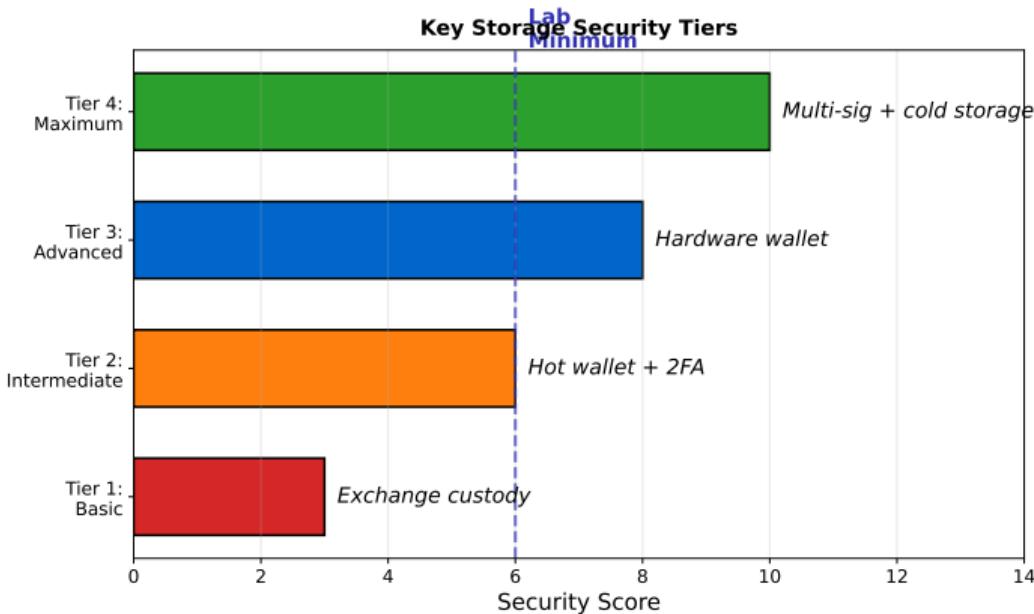
Overview:

- Browser extension and mobile app cryptocurrency wallet
- Supports Ethereum and EVM-compatible blockchains
- Non-custodial: you control private keys
- Most popular Ethereum wallet (30 million users)

Key Features:

- Send and receive ETH and ERC-20 tokens
- Interact with decentralized applications (dApps)
- Multiple account management
- Network switching (Mainnet, testnets, custom networks)

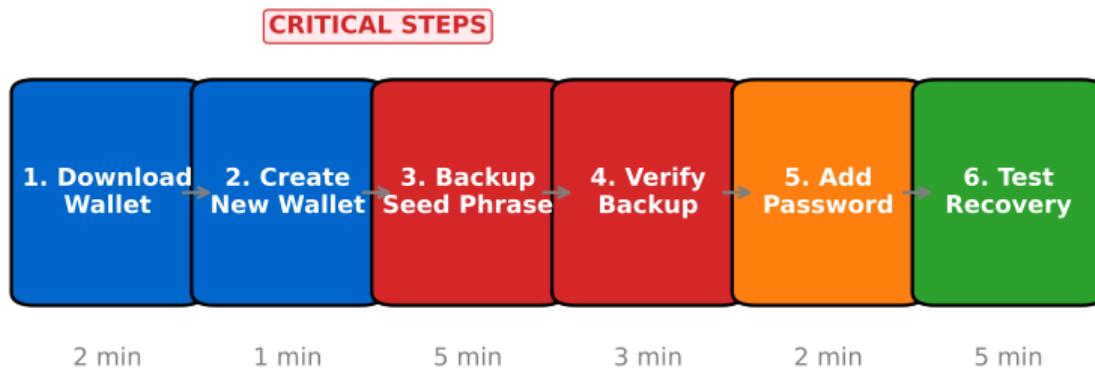
Security Levels for Key Storage



For this lab, Tier 2 (hot wallet + 2FA) is the minimum acceptable level

Wallet Setup Workflow

Wallet Setup Workflow (18 minutes total)



Seed phrase backup (steps 3-4) is the most critical part of wallet setup

Exercise 1: Installing MetaMask

Installation Steps:

- ① Visit official website: <https://metamask.io>
- ② Click “Download” and select your browser
- ③ Install extension from official browser store
- ④ Pin extension to browser toolbar
- ⑤ Click MetaMask icon to launch setup wizard

Security Warning:

- Only install from official sources
- Beware of phishing sites (check URL carefully)
- Fake extensions exist in browser stores

Exercise 2: Creating Your Wallet

Setup Wizard Steps:

- ① Click “Create a new wallet”
- ② Set a strong password (8+ characters)
- ③ Reveal and record your 12-word seed phrase
- ④ Confirm seed phrase by selecting words in correct order

Critical: Seed Phrase vs. Password

- Seed phrase = master backup (recovers wallet on any device)
- Password = local device protection (cannot recover wallet)
- **Lose seed phrase -& lose wallet permanently**

Exercise 3: Adding Sepolia Testnet

Why Use Testnets?

- Practice without risking real money
- Free testnet ETH available from faucets
- Identical functionality to mainnet

Adding Sepolia Network:

- ① Click network selector (top-right dropdown)
- ② Settings -> Advanced -> Show test networks (enable)
- ③ Select "Sepolia test network"

Sepolia Faucets:

- Alchemy: <https://sepoliafaucet.com>
- Infura: <https://www.infura.io/faucet/sepolia>

Exercise 4: Sending Your First Transaction

Transaction Steps:

- ① Ensure you have Sepolia ETH (from faucet)
- ② Click "Send" button in MetaMask
- ③ Enter recipient address (create second account or use classmate's)
- ④ Enter amount (e.g., 0.1 Sepolia ETH)
- ⑤ Review transaction details (gas fee, total)
- ⑥ Click "Confirm"
- ⑦ View in Activity tab

Understanding Gas Fees:

- Fee = gas units × gas price (in gwei)
- Sepolia: fees are negligible (testnet)

Critical Security Rules:

- ① **Seed Phrase:** Never share, never store digitally
- ② **Phishing Protection:** Verify URLs, bookmark trusted sites
- ③ **Network Verification:** Confirm correct network before transacting
- ④ **Transaction Approval:** Review recipient and amounts carefully

Common Threats:

- Phishing websites requesting seed phrase
- Malicious dApps with unlimited token approvals
- Clipboard malware replacing copied addresses
- Fake support scams via DM

Submit the following:

① Screenshot Collection:

- MetaMask wallet showing Sepolia network
- Transaction details from Activity tab
- Etherscan transaction page (confirmed)

② Lab Report (1-2 pages):

- Your Sepolia address
- Transaction hash of sent transaction
- Reflection on seed phrase security

Submission Deadline: One week from lab session

Key Takeaways

- MetaMask is a non-custodial wallet (you control private keys)
- Seed phrase is the master backup for all accounts
- Testnets provide safe environment for learning
- Gas fees vary by network congestion
- Blockchain transactions are irreversible
- Security requires vigilance against phishing and scams