

# Lab Session: Testnet Lending

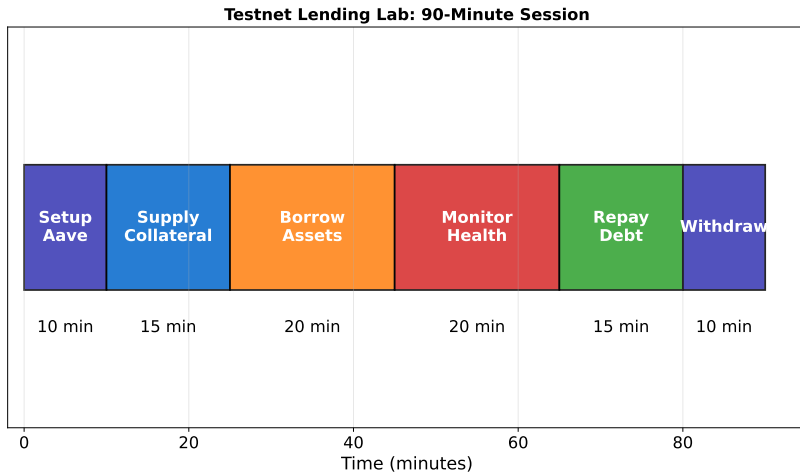
BSc Blockchain, Crypto Economy & NFTs

Course Instructor

Module E: DeFi Ecosystem

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

- Supply assets to Aave as collateral
- Borrow against collateral on testnet
- Calculate and monitor health factor
- Understand liquidation mechanics
- Repay debt and withdraw collateral



*Hands-on lending experience with zero financial risk*

# Step 1: Access Aave Testnet

**URL:** `https://app.aave.com`

## Actions:

- 1 Connect MetaMask wallet
- 2 Switch to Sepolia testnet
- 3 Verify Aave V3 Sepolia interface

## Interface Overview:

- Dashboard: Your supply/borrow positions
- Markets: Available assets
- Health Factor: Your risk indicator

## Step 2: Supply Collateral

**Goal:** Deposit ETH to enable borrowing

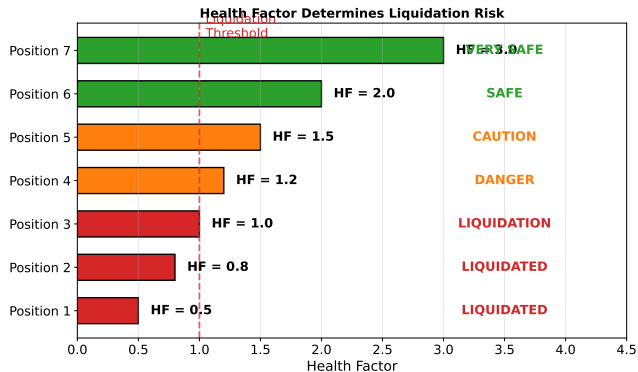
**Process:**

- 1 Click "Supply" on Dashboard
- 2 Select ETH (0.5 ETH recommended)
- 3 Enable as collateral
- 4 Confirm transaction

**Record:**

- Supply APY received
- aWETH tokens received
- Total collateral value

# Understanding Health Factor



*Health factor below 1.0 triggers liquidation*

## Step 3: Borrow Assets

**Goal:** Borrow USDC against ETH collateral

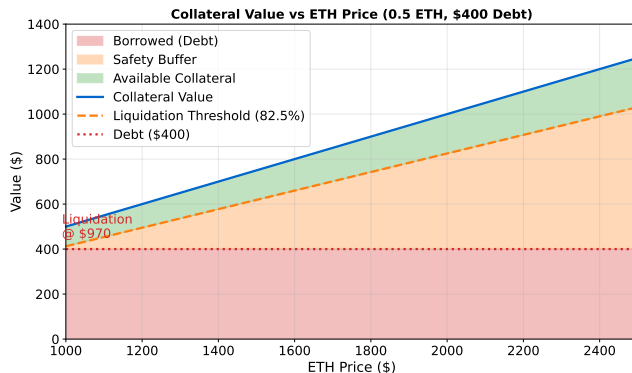
**Health Factor Formula:**

$$HF = \frac{\text{Collateral} \times \text{Liquidation Threshold}}{\text{Borrowed Amount}}$$

**Example:**

- Collateral: \$1,000 (0.5 ETH at \$2,000)
- Borrow: \$400 USDC
- $HF = \frac{1,000 \times 0.825}{400} = 2.06$

# Collateral vs Liquidation Risk



*ETH price drop reduces collateral value - HF approaches 1.0*



## Step 4: Monitor Position

### Track Over Time:

- Watch health factor on dashboard
- Observe interest accrual (supply vs borrow)
- Calculate net cost:  $\text{Borrow APY} - \text{Supply APY}$

### Risk Management:

- Add collateral if HF drops
- Repay partial debt to increase HF
- Never let HF approach 1.0

## Step 5: Repay and Withdraw

### Repay Debt:

- 1 Click “Repay” on borrowed asset
- 2 Select full or partial repayment
- 3 Approve and confirm

### Withdraw Collateral:

- 1 Ensure debt is fully repaid
- 2 Click “Withdraw” on supplied asset
- 3 Receive ETH plus earned interest

## Submit:

### ① Lab Report (3-4 pages):

- Supply and borrow details
- Health factor calculations
- Liquidation price calculation
- Interest accrual analysis

### ② Supporting Evidence:

- Dashboard screenshots
- Transaction hashes

# Key Takeaways

- DeFi lending requires overcollateralization
- Health factor must stay above 1.0
- Interest rates adjust based on utilization
- aTokens represent interest-bearing deposits
- Liquidation protects lenders but penalizes borrowers
- Always test on testnet before using real funds