

21Lectures

Bitcoin Masterclass
Intro

whoami

Background: Computer science, Neuroscience

Attended the inaugural 2018 course

Working in the space since mid-2019

Now: 21 Analytics, co-founded in 2020, 21 Lectures, co-founded in 2023

Open-source: github.com/dspicher

James Chiang

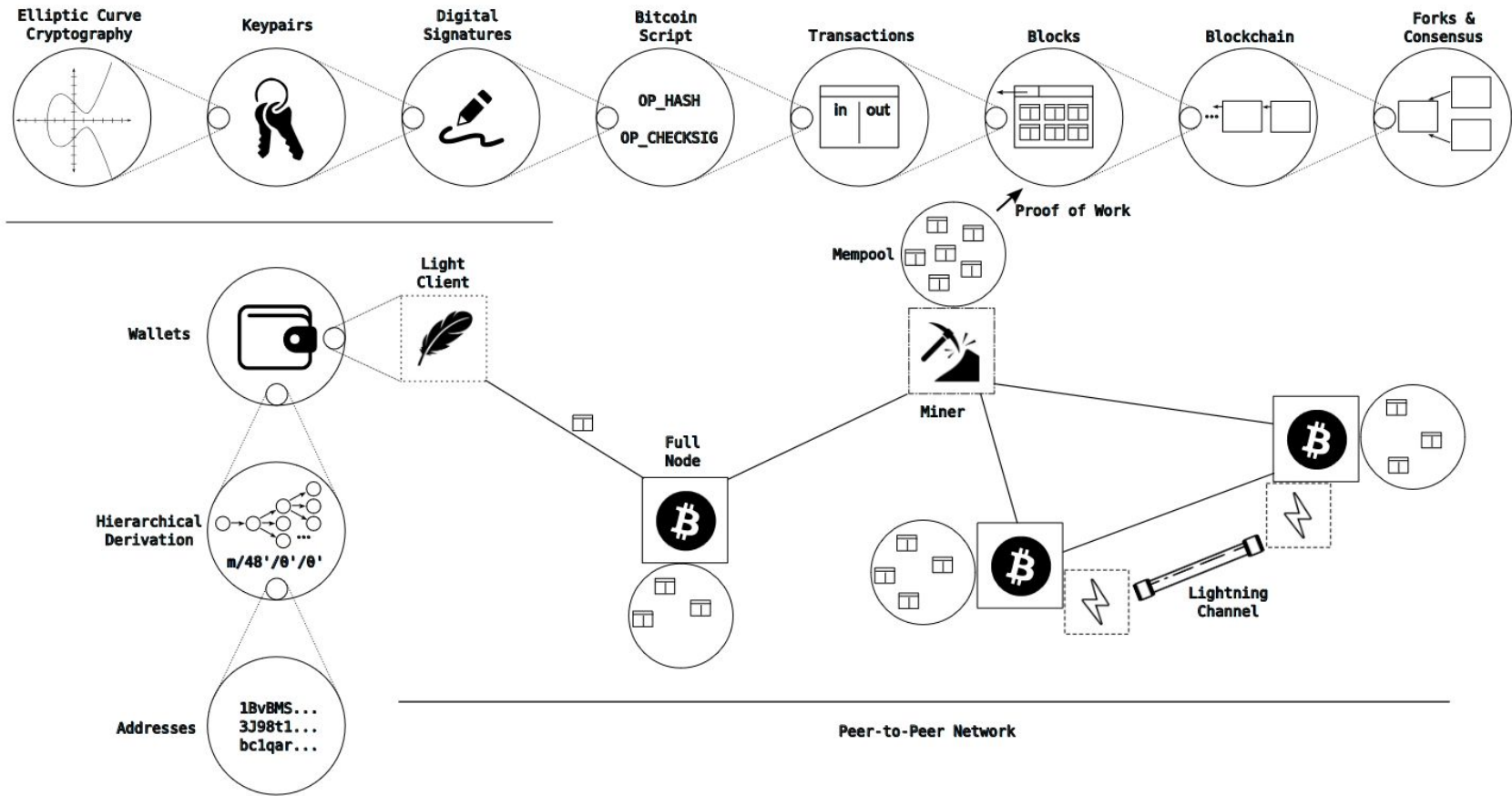


- <https://teachbitcoin.io/>
- Lots of slides
- The “bx” exercises set

Buy him a beer!

Course Goals

- Get a detailed understanding of how Bitcoin works on a technical level
- Increase the scope for self-learning
- Meet like-minded people, discuss, network



Technical Concepts in Bitcoin

21 Lectures

A two-day whirlwind tour across Bitcoin's core concepts

Day 1 morning

- Elliptic curves
- Digital signatures
- **Setup Works**

Day 1 afternoon

Transactions:

- Scripting, P2SH
- Timelocks, Timestamping
- SegWit
- **Exercise: Spend a testnet P2PKH**

Day 2 morning

- HD Wallets
- Blocks, mining
- Confirmation model
- **Exercise: HD Wallets**

Day 2 afternoon



- Forks & Reorgs
- Taproot
- SPV clients
- RSMCs / HTLCs
- **Exercises Contd.**

Missing:

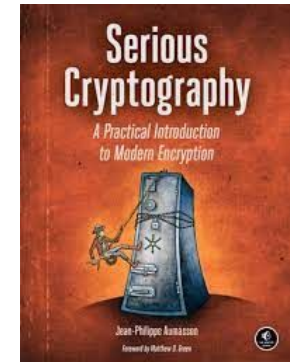
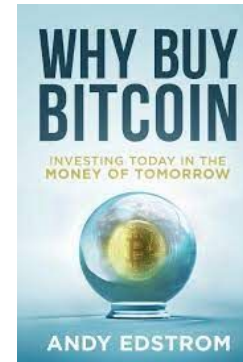
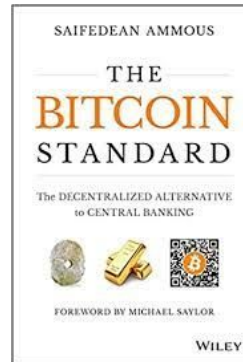
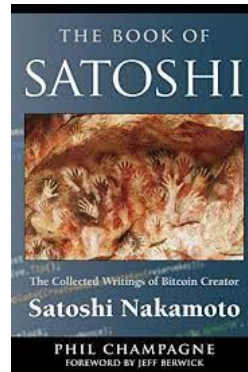
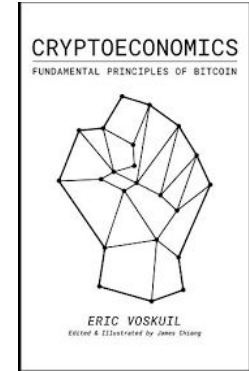
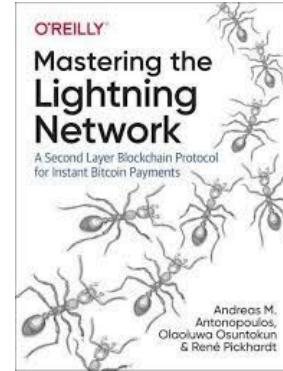
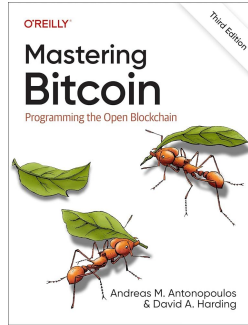
- P2P

Exercises: 1-1.5 hrs

A day in the life of a Masterclass student

- Start 09:00
- 
- Lunch (included 🎉) 12:00
- Start Afternoon 13:15
- 
- End 16:30 – 17:00

Resources



Other resources

- [BIPs](#): the closest thing to a specification for Bitcoin
- [Optech Newsletter](#)
- [Bitcoin from the command line](#)
- [Libbitcoin source code](#)

Exercises

Two prepared exercises

- With “bx”, the libbitcoin explorer command line tool
 - <https://github.com/libbitcoin/libbitcoin-explorer/wiki>
- exercises/2024_exercises
 - Spend P2PKH output prepared for you
 - Parent private key exposure for non-hardened BIP32 derivation

There is a full set of much more comprehensive exercises:

- Explore!

Finally ...

this course is for you!

