

# PV204 Security technologies



## Cryptocurrencies I. - Bitcoin and Lightning network basics

Petr Švenda  [svenda@fi.muni.cz](mailto:svenda@fi.muni.cz)  [@rngsec](https://twitter.com/rngsec)

Centre for Research on Cryptography and Security, Masaryk University

**CRCS**

Centre for Research on  
Cryptography and Security

## Three stages of Lecture and Seminar next week

- [before 22.3. 12:00] Preparation before Tuesday lecture
  - Watch videos, read slides
- [22.3. 12:00] Lecture, flipped classroom
  - Write your questions to [slido.com](https://www.slido.com) #pv204\_2022 or ask (as usually)
- [24.3.] Seminar
  - Team discussions
  - Working with bitcoin-cli
  - Bitcoin operations on-chain and via Lightning transactions

## Preparation: Videos for Lecture

- Mandatory part
  - Watch ‘*But how does bitcoin actually work?*’ by 3Blue1Brown (26min)
    - <https://www.youtube.com/watch?v=bBC-nXj3Ng4>
  - ‘What is the Lightning Network?’ by 99Bitcoins (7 minutes)
    - <https://www.youtube.com/watch?v=pBh4DcM-0pg>
  - Read slides Hello Bitcoin (including notes under every slide)
    - From <https://www.hellobitco.in/>, copy of slides in IS
- Optional:
  - Watch ‘A Technical Introduction to The Lightning Network’ by A. Antonopoulos (43min)
    - [https://www.youtube.com/watch?v=E1n3sKKPD\\_k](https://www.youtube.com/watch?v=E1n3sKKPD_k)

## Further reading

- Mastering Bitcoin (Andreas M. Antonopoulos and others)
  - <https://github.com/bitcoinbook/bitcoinbook>
- List of interesting resources
  - <https://blockonomi.com/bitcoin-educational-resources/>