

## NETWORKS AND DISTRIBUTED SYSTEMS LAB

### Advanced Topics in Networking

"Advanced Topics in Networking" is a course for **M.Sc.** students of Computer Science (and related study programs). It is held as a combination of a › lecture (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&publishid=201269&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung>) and

› exercises (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&publishid=202202&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung>) .

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| <b>Instructor:</b>     | Prof. Dr. David Hausheer   |
| <b>Assistants:</b>     | Lars-Christian Schulz, Tony John, Robin Wehner                                       |
| <b>Hours per week:</b> | 2 + 2  |
| <b>Credits:</b>        | 6  |
| <b>Lecture:</b>        | Wednesday, 09:30 - 11:00, Location: G02-311  |
| <b>Exercises:</b>      | Monday, 11:15 - 12:45, Location: G29-334<br>Friday, 09:15 - 10:45, Location: G29-334 |
| <b>Exam:</b>           | Written Exam (In case of few registrations, an oral exam will be held.)              |
| <b>Languages:</b>      | English  |

The course deals with advanced topics in the area of networking, a.o.:

- ▶ Overlay Networks for Content Delivery, e.g. P2P, BitTorrent, CDNs, Caching, Overlay Video Streaming
- ▶ Distributed Hash Tables (DHT), e.g. Kademlia
- ▶ Blockchains
- ▶ Cryptocurrencies and Bitcoin
- ▶ Ethereum and Smart Contracts
- ▶ Secure Network Architectures, e.g. SCION
- ▶ Congestion Control, e.g. QUIC and Multipath-QUIC

Students will get a deep insight into various advanced topics in the area of networking.

Textbooks as indicated.

Slides and paper copies as necessary.

Basic courses of the first 4 semesters are required. Knowledge of lectures Communication and Networks are recommended.

The course material will be made available using the **Moodle platform**:

› <https://elearning.ovgu.de/course/view.php?id=15722> (<https://elearning.ovgu.de/course/view.php?id=15722>)