

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&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=147552>)

and › exercises (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=147551>)

and › exercises (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=147551>)

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| Instructor: | Prof. Dr. David Hausheer |
| Assistants: | Agostino Moosdorf |
| Hours per week: | 2 + 2 |
| Credits: | 6 |
| Lecture: | Thursday, 11:15 - 12:45, Location: G16-215 |
| Exercises: | Tuesday, 09:15 - 10:45, Location: G29-334 Thursday, 09:15 - 10:45, Location: G29-334 |
| Exam: | In case of few registrations, an oral exam will be held. |
| Languages: | English/German |

Course Description

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.

Literature

Textbooks as indicated.

Slides and paper copies as necessary.

Requirements

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

Resources

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

> <https://elearning.ovgu.de/course/view.php?id=6150> (<https://elearning.ovgu.de/course/view.php?id=6150>)
