OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

**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=166717&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung) and ›exercises (https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&publishid=166722&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung).

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|---|---|
| **Instructor:** | Prof. Dr. David Hausheer |
| **Assistants:** | Thorben Krüger, Lars-Christian Schulz |
| **Hours per week:** | 2 + 2 |
| **Credits:** | 6 |
| **Lecture:** | Thursday, 11:15 - 12:45, Location: Online (Please check the ›Moodle for further information) |
| **Exercises:** | Monday, 13:15 - 14:45, Location: Online<br>Thursday, 13:15 - 14:45, Location: Online |
| **Exam:** | Written Exam (In case of few registrations, an oral exam will be held.) |
| **Languages:** | English |

# 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=8860 (https://elearning.ovgu.de/course/view.php?id=8860)