

## 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=136081>)

and › exercises (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=136082>)

and › exercises (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung&veranstaltung.veranstid=136082>)

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<b>Instructor:</b>	Prof. Dr. David Hausheer
<b>Assistants:</b>	Leon Wehmeier, N.N.
<b>Hours per week:</b>	2 + 2
<b>Credits:</b>	6
<b>Lecture:</b>	Thursday, 13:15 - 14:45, Location: G02-111
<b>Exercises:</b>	Wednesday, 13:15 - 14:45, Location: G29-334 Friday, 09:15 - 10:45, Location: G29-334
<b>Exam:</b>	In case of few registrations, an oral exam will be held.
<b>Languages:</b>	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=5285> (<https://elearning.ovgu.de/course/view.php?id=5285>)

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