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) .

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 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)