

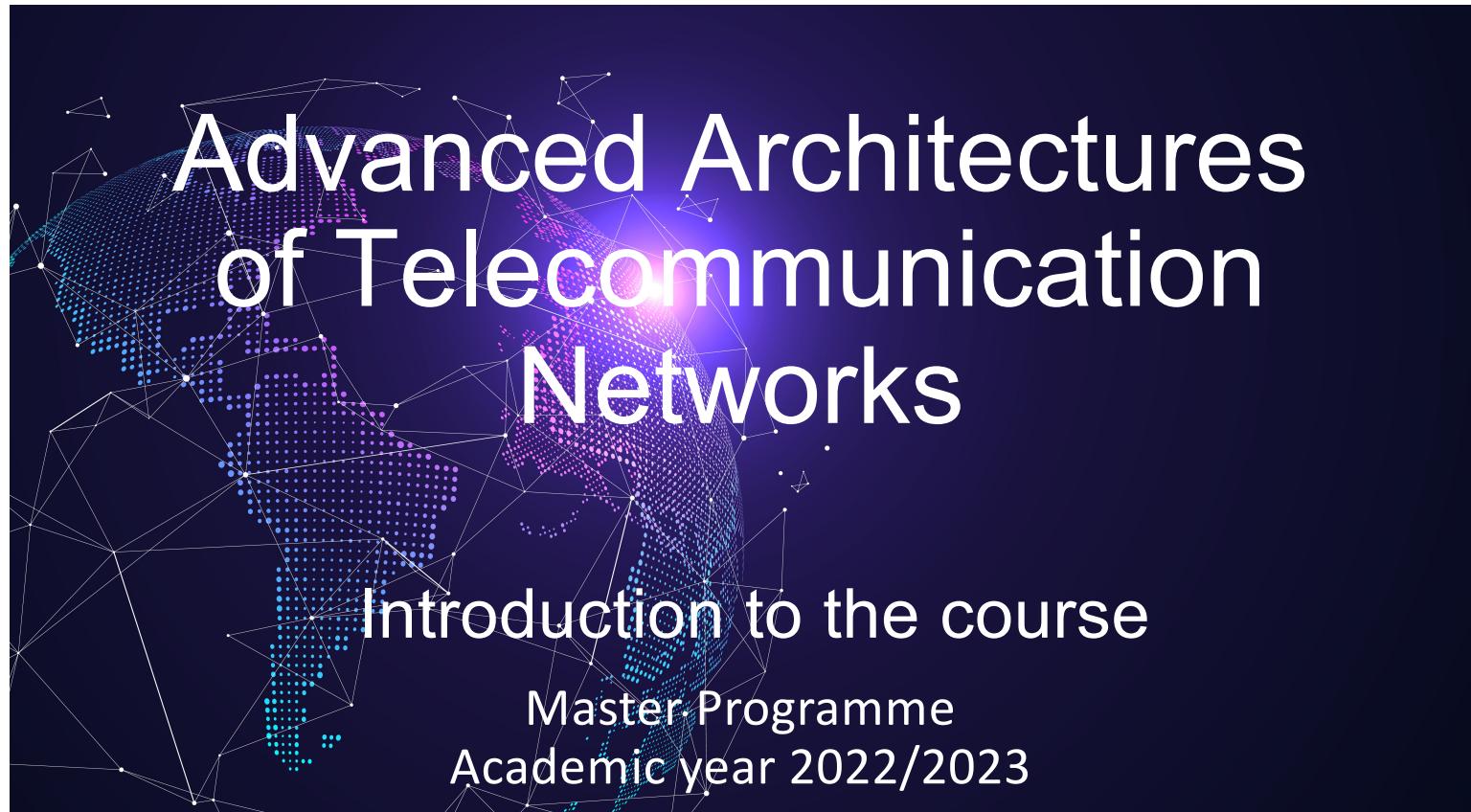


UNIVERSITY OF ZAGREB



Faculty of Electrical
Engineering and
Computing

**Master Programme
Computing**



Lecturers



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Assistant



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mag. ing.

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Course topics

- Next generation fixed and mobile communication network architectures (e.g., high-speed optical networks, 5G mobile networks).
- Network signaling and protocols.
- Software Defined Networks.
- Network Function Virtualization (NFV), Network Virtualization (NV), and cloud deployment technologies.
- Mobility and identity management.
- Quality of Service.
- Network resource management and network slicing techniques.
- Case studies and examples of real network deployments.

Organization

Lectures

2 blocks (7+6 lectures)

2 hour lectures

Individual work

continuous

learning and exams
laboratory exercises

Lecture number	Date	Lecture Topic	Laboratory assignment
1	March 1	Introduction to telecom networks. Evolution of fixed networks.	
2	March 8	High speed optical networks.	
3	March 15	Network softwarization: trends towards more programmability and flexibility in communication networks. Introduction to Software Defined Networking.	
4	March 22	Software Defined Networking.	
5	March 29	Network function virtualization (NFV) and network virtualization (NV). Cloud virtualization technologies. Reference architectures for NFV management and orchestration (MANO).	LAB1: SDN
6	April 5	Multi-access edge computing (MEC): enabling cloud computing capabilities and IT services at the network edge.	
7	April 12	Mobile network evolution towards 5G. 5G use cases and requirements.	
MIDTERM EXAM			
8	May 3	Basic 5G network architecture: key network components and interfaces.	
9	May 10	Network signaling: key mechanisms and protocols related to the establishment, modification, and maintenance of sessions/calls.	LAB2: NFV
10	May 17	Mobility management and identification of mobile subscriber and equipment.	
11	May 24	Resource management: Quality of Service support. Network slicing.	LAB3: Network trace analysis
12	May 31	Security aspects.	
13	June 7	Invited lecture.	
FINAL EXAM			

Literature

What to use?

- Power point slides from the lectures
- Own notes from lectures
- RFCs (*Request for Comments*) and whitepapers – defined during lectures
- Official literature for the course defined on the FER web page

Grading - continuous

Components:

Laboratory assignments:

Points:

30 (3 assign. – all mandatory, 3x10,
minimum 15)

Midterm:

35 (no minimum)

Final exam:

35 (exam 25, oral exam 10)

Grading - exams

Components:

Laboratory assignments:

Points:

30 (3 assign. – all mandatory, 3x10,
minimum 15)

Written exam:

60

Oral exam:

10

Final grades

Total **>= 50** points with **at least 15 points** from laboratory assignments

Grades:	Points:
5	85 – 100
4	75 – 84
3	65 – 74
2	50 – 64

Laboratory assignments

You will get an introduction and tasks for each assignment

3 assignments (30 points)

- LAB1: Software defined networks - setup and usage on a simulator
- LAB2: Network function virtualization – setup and usage on a simulator
- LAB3: 5G network traces analysis

Submissions and grading

- Report submission through Moodle after each assignment and interview with assistant
- Strict deadlines for assignment submission
 - Possible: if you miss the deadline, you can still submit the assignment, but with lower points!

Additional information

Web:

<https://www.fer.unizg.hr/en/course/aaotn>
<https://www.fer.unizg.hr/predmet/natm>

Consultations:

Contact us by email!

For any questions:

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