




Arquitecturas de Redes

MSC.Engenharia de Computadores e Telemática
1º ano, 1º semestre, 2024/2025

Paulo Salvador, UA/IEETA
Rui L Aguiar, UA/IT

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Network Architectures

- Professors
 - Rui L Aguiar (ruilaa@ua.pt) – DETI/IT
 - Paulo Salvador (salvador@ua.pt) – DETI/IEETA
 - Theoretical classes (regente)
 - Practical Classes

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Planning

- 14 weeks scheduled for theoretical and practical classes
 - Information in elearning...
 - English language in slides

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Objectives

- to provide an integrated vision of communication networks, including aspects associated with user, service, and network requirements.
 - Focus on architectures and “the converged operator”
 - Management, multimedia communications, and virtualization and service distribution.
 - Students should be able to:
 - the evolution of telecommunication systems;
 - service support in an operator environments, with aspects as management, transport protocols and signalling.
 - the current network architectures and the virtualization trends.

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Program

- Groups of classes as theoretical and practical
 - Need to understand the class to close the practical works
 - Some classes will be mixed
 - Is it possible to change times for the classes?
 - 30 min later
 - Warnings on elearning
 - Some dates are a problem

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Program

1	19/09/2024	Introduction. Program and Rules.	
2	26/09/2024	IP-based QoS models. Features and fundamentals. Token buckets and leaky buckets.	TP: DiffServ Architecture
3	03/10/2024	Interserv and diffserv architectures	TP: DiffServ Architecture
4	10/10/2024	BGP review	TP: BGP (advanced topics)
5	17/10/2024	Advanced topics of BGP	TP: BGP (advanced topics)
6	24/10/2024		TP: BGP (advanced topics)
7	31/10/2024	Network Management: basics. TMN, CMIP/CMIS. Policy-based management	TP: Management SNMP
8	07/11/2024	SNMP	TP: Management SNMP
9	14/11/2024	MPLS. Conceitos de engenharia de tráfego. MPLS-RSVP.	TP: BGP EVPN
10	21/11/2024	Corporate networks: MPLS tunnels and VPNs	TP: MPLS tunnels
11	28/11/2024	VPNs Layer2	TP: MPLS VPN
12	05/12/2024	Multimedia networks: Interdomain and CDNs	TP: CDN Routing with Conditional DNS
13	12/12/2024		minitest, demo discussion
14	19/12/2024	Convergent telecom networks: history, trends, futures	Project demo presentation

Exam


– 15-Jan-2025, 10h00

Second phase

– 31-Jan-2025, 10h00

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Evaluation criteria

- Theory: 50%
 - Single test.
 - Final exam (a.k.a. exame de recurso) will contain all subjects as well
- Practical: 50%
 - mini-test (practical material), 15%
 - Project Work: 30%,
 - including "presentation" and "reporting" (5%).

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Organization

- All information to be displayed in e-learning
 - Announcements
 - Classes handout
 - Practical works
 - Evaluation and grades
- Summaries in paco.

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