Comunicações Móveis

Mestrado em Engenharia de Computadores e Telemática
MIECT
1º Semestre, 2022/2023

Daniel Corujo, UA/IT

Mobile Networks

- Professors
  - Daniel Corujo (dcorujo@ua.pt) – DETI (UA)/IT
  - Francisco Fontes (fontes@alticelabs.pt) – ALB/IT

	Segunda	Terça	Quarta	Quinta	
9:00					
9:30				CM 04.3.30 TP1 (TP)	CM 04.3.31 TP3 (TP)
10:00					
10:30					
11:00					
11:30					
12:00					
12:30					
13:00					
13:30					
14:00					
14:30					
15:00					
15:30					
16:00				CM 04.3.30 TP2 (TP)	
16:30					
17:00					
17:30					
18:00					
18:30					
19:00					

Planning

- 13 weeks scheduled for theoretical and practical classes
  - Information in elearning…
  - English language in slides

Objectives

- Develop concepts associated to different types of mobile networks
  - Overall perspective of different wireless networks
  - Integration into a future vision, with heterogeneous environments.
    - "5G"-alike world.
  - Focus on networking, system and protocol aspects
    - IT-integration aspects mostly in other subject
  - Students should be able to:
    - understand future mobile network integrated systems;
    - understand new technologies and concepts of wireless communications;
    - be able to use their knowledge to react to the current changes in wireless networks

Program

Class #	Date	Topic
1	22/sep	Introduction Mobile Communications Multicast/Broadcast: Radio vs IP
2	29/sep	Mobile Networks models: the 802.x architecture. WSN, PAN, LAN, WAN, BAN Wireless Local Networks: Wi-Fi and its evolving nature
3	06/out	Buletooth architecture: BT 3-4, and BLE. Overview of sensor networks and the ZigBee technology
4	13/out	Practical Work: Wi-Fi
5	20/out	Practical Work: Wi-Fi (part 2) + Bluetooth
6	27/out	Cellular networks: from 1G to 4G
7	03/nov	Cellular networks: 5G Technological revolution (SDN, NFV, MANO, EDGE, ML/IA)
8	10/nov	Practical Work: Software Defined Networking
9	17/nov	WWSD: LoRa, SigFox, …
10	24/nov	Pratical Test (written) + Choice of Pratical Project
	01/dez	
	08/dez	
11	15/dez	Project Work
12	22/dez	Project Work - Preliminary demo
13	05/jan	Demo and evaluation (full-day)

- The Lab will be used both for Theoretical and Practical classes

5

Evaluation criteria

- Theory: 50%
  - Exam at the normal season
  - Final exame (a.k.a. exame de recurso) will contain all subjects as well

- Practical: 50%
  - 15%: Written mini-test about the practical works (24/11)
  - 35%: Project Work
    - 10%: Preliminary Demo of on-going work (22/12)
    - 20%: Final Demo (5/1)
      - 10% for the demo itself
      - 5% for the overall joint presentation
      - 5% for students' individual answers to questions
    - 5% for the written report

Organization

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