






Comunicações Móveis

MSC.Engenharia de Computadores e Telemática
4º ano, 1º semestre, 2021/2022

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Mobile Networks

- Professors
 - Rui L Aguiar (ruilaa@ua.pt) – DETI (UA)/IT
 - Theoretical classes (regente)
 - Practical Classes
 - Daniel Corujo (dcorujo@ua.pt) – DETI (UA)/IT
 - Francisco Fontes (fontes@alticelabs.pt) – ALB/IT

STAY SAFE
KEEP PRECAUTIONS

2



Planning

- 13 weeks scheduled for theoretical and practical classes
 - Information in elearning...
 - First time this runs...
 - ... Nothing there now ☹
 - English language in slides


3



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


4



Program

1	14-Oct	Introduction
2	21-Oct	Mobile communications. Physical Layer aspects: modulation, RSSI, coding. Multicast/broadcast: radio versus IP.
3	28-Oct	Mobile Networks models: the 802.x architecture. WSN, PAN, LAN, WAN, BAN. Bluetooth architecture: BT 3-4, and BLE. Overview of sensor networks and the Zigbee technology.
4	04-Nov	Wireless local networks: WIFI, and its evolving nature.
5	11-Nov	Practical work BT?
6	18-Nov	WIFI?
7	25-Nov	Adhoc? Wsn
8	02-Dec	Cellular networks: 2/3/4/5G. Cells, femto cells, and mobility challenges.
9	09-Dec	GTP and overlays. Integrated heterogeneous architectures: 5G and IP as integrating approaches
10	16-Dec	Tecnologias and concepts for LPWAN: Lora, Sigfox, NB-IoT.
11	06-Jan	Final work: project discussion
12	13-Jan	Final project evolution
13	20-Jan	Demo preparation
		Demo and evaluation


5



Program

- Groups of classes as theoretical and practical
 - Issues still with the room
 - Need to understand the class to close the practical works
 - Is it possible to change times for the theoretical classes?
 - Possible to use another room, to facilitate classes
 - Warnings on elearning


6



Evaluation criteria

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

7



Organization

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

8