TECHNOLOGIES AND ARCHITECTURES FOR THE NEW TERRESTRIAL AND SPACE COMMMUNICATIONS

Monday 14:30 – 16:00 and Friday 16:15 – 17:45

Topic 1: Introduction to Radiocommunication Systems: Link Balance, Architectures and Quality of Service.
J. Joaquín Escudero Garzás
14 Sep - Introduction and basic concepts. Work proposals.
18 Sep - Overview of terrestrial and space communications.

Topic 2: Modulations and Access Techniques.
Ana García Armada & J. Joaquín Escudero Garzás
21 Sep – Modulations for wireless communications (AGA).
25 Sep – OFDM (AGA).
28 Sep – Matlab simulation of OFDM in 5G (AGA).
2 Oct – Other multicarrier modulations (AGA).
5 Oct – Multiple access.
9 Oct – Matlab simulation of scheduling and random access.
16 Oct – Space Division Multiple Access.
19 Oct – Space Division Multiple Access (cont).

Topic 3: Terrestrial Communication Systems.
J. Joaquín Escudero Garzás
23 Oct – Introduction to terrestrial wireless communication systems. Short-range networks: WPAN/Bluetooth, wireless and body sensor networks).
26 Oct – WLAN. WiFi.
30 Oct – Matlab simulation of short-range wireless networks
6 Nov – Introduction to LTE. RAN architectures.
9 Nov – LTE (II).
13 Nov – Matlab simulation LTE.
16 Nov – Introduction to 5G systems.
20 Nov – IoT and D2D.
23 Nov – Matlab simulation 5G.

Topic 4: Space Communication Systems.
J. Joaquín Escudero Garzás
27 Nov – Introduction to satellite systems.
30 Nov – The satellite link budget.
4 Dic – Matlab simulation (I).
11 Dic – Navigation systems.
14 Dic – New trends and 5G systems.
18 Dic – Matlab simulation (II).
21 Dic – Student Presentations.