# 01UEF
# Digital Communication Laboratory

## Project #3

### PART 1

Using Matlab implement a digital transmission system capable of sending a data file from one device (personal computer, smartphone, tablet, etc.) to a PC using an audio signal.

It is not required that data transmission will run in real-time: off-line post-processing is acceptable.

Select an image file and build a software capable of transmitting it.

In the report, you must clearly describe all steps and decisions taken, motivating them.

Test which is the maximum data rate achievable with your hardware setup.

Expected outcomes: spectra, eyediagrams, scattering diagrams, BER countings, etc.

### PART 2

Using Matlab and the SDR receiver implement a RF spectrum analyzer: properly select parameters in order to analyze the wanted spectral region.

Analyze the frequency division multiplexing FDM services of FM (88-108 MHz) and DAB radio (174-240 MHz).

Expected outcomes: spectra of the FM and DAB services.