UNIVERSITY OF PATRAS
Postgraduate program
Biomedical Engineering

BIOSIGNAL PROCESSING

In folder *projects* you will find three files containing electrocardiography (ECG) signals for three independent tasks to be delivered.

Project 1: Two channels ECG - Remove artifacts and Noise.
Project 2: Two channels ECG - Eliminate noise and Estimate mean heard rate (every 0.5 secs)
Project 3: One channel ECG - Eliminate artificial noise

In all three tasks you must submit the signals that you will create, the corresponding code (MATLAB, Octave, Python etc), that will create these signals and a report of the processes you have implemented.

Your report should be governed by three characteristics. **Completeness, clarity, and austerity in the description.** If needed, you could make assumptions and approaches to lead to the solution of the problem.

You could use any method of signal noise removal and heart rate assessment you want, even if it is not in the curriculum, however you are obliged to give a brief description and the corresponding bibliography.

Task 1: Reduce any kind of noise in the signal.

Task 2: You have to reduce any kind of noise and calculate the average heart rate which will be calculated every half minute.

Task 3: You must remove the artificial noised added to the signal.

You will deliver the tasks by sending the corresponding zip file to the Assignments: Projects 1-2-3 folder of e-class.