Main equipment

1. Analog Discovery 2 or 3
2. Microcontroller (e.g. Arduino)
3. Breadboard
4. Breadboard jumper wires kit rigid and flexible mix
5. Parts for Assignments as shown below (versions with DIP package for breadboards)

Assignments

1. Familiarization with equipment 1/22 no due report
2. Negative Feedback and Push-Pull Amplifier (100 pts) 1/29
    a. 1x2N3904, 1x2N3906, 1xOP27
3. Differential Amplifier (100 pts) 2/5
    a. 4x 2N3904
4. Multi-Stage Amplifier (200 pts) 2/12
    a. Several NON and PNP BJTs of your choice (recommended 2N3904, 2N3906)
5. Oscillators (100 pts) 2/26
    a. 3x 2N3904, 3x2N3906, 20µH Inductor (e.g. CTX-20-2)
6. Infrared Transmitter and Receiver (100 pts) 3/4
    a. 1xQED123, 1xQSD124, 1xOP27, 1x2N3904
7. Radio-Frequency Communications (200pts) 3/18
    a. 1x2N3904, 1x2N3906, hand-made inductor, FM receiver to demonstrate operation
8. Micro-Controller Embedded System (200pts) 4/1
    a. Yellow, green, red, blue and white LEDs, photoresistor
9. Active Filter and Sigma-Delta Modulator (100 pts) 4/15
    a. 1xOP27, 1x74LS74 or 1x74HC74
10. Electrocardiogram (100 pts) 4/22
    a. 1xINA111 or 1xAMP02, 1xLT1792 or 1xAD711