

# ECE 476/676 - Homework #10

*GPS & BlueTooth - Due Monday, April 14th*

## **GPS: How Fast Can You Run?**

1) (30 points): Write a Python program which measures how fast you can run using a GPS sensor.

- Record your speed with a GPS sensor
- Start new recording by pressing button GP15
- While recording, detect the maximum speed seen from the GPS sensor, and
- Display the top three speeds on graphics display

Include

- Your Python program
- Data showing it is working
- A photo of your graphics display showing your three fastest speeds

2) (10 points): Demo your program

- Short video preferred
- Photos also work

## **BlueTooth & Motor Speed:**

3) (30 Points): Write a Python program which allows you to control the speed of a DC motor using your cell phone and a bluetooth interface. Some options are:

- Use PWM to vary the speed and direction of the DC motor
- Use commands to set the direction (CW or CCW) and speed (000 to 100)
- Use a long string to input both (+100, -085, etc)

When completed, you should be able to set the voltage to the motor from -100% to +100%

Include:

- Your Python program
- Data showing it is working (CW, CCW, speed or voltage changes with data input)

4) (10 points); Demo your program

- Short video preferred
- Photos also work