**Geocomputing (Year 3)**

**Assignment 1: GPS, database and vectors**

**Part 1: Create a GPS raw NMEA log file**

- Describe the gpspipe program

- Use your GPS to map something (roads, buildings, etc) using gpspipe

- Describe 5 NMEA sentences at different locations on your track

**Part 2: DB and GPS**

- Describe the gpsd program

- Use gpsd\_to\_DB.py to log your trip to a sqlite Database

- Describe the sqlite database and the sqlitebrowser programs

- use sqlitebrowser to access the newly generated GPS database

**Part 3: SQL and GPS database**

- Describe SQL language

- Select all GPS records that are within five seconds of a road crossing/building corner

- Select all GPS records that are within 50 meters of the same crossing/corner

**Part 4: Create Vector files from selections**

- Describe Python-OGR

- Export the two selections of Part 3 (only latitude and longitude)

- Create shapefiles for each selection

- Add a text attribute column with a name of your crossing/corner at the best location

Make two final maps in QGIS with the crossing/corner annotation, use the OpenLayers plugin to cast a high resolution raster image in the background of your shapefiles.