Introduction to GIS Short Course

Department of Earth & Environmental Science – January 2016

Day 1: Introduction to GIS & Making Maps

1. Introduction to GIS Lecture
    - What is Geographic Information?
    - Representing geographic data
    - Vector and Raster data
    - Install QGIS
2. Map of Canada Tutorial
    - Adding data to QGIS
    - How to pan, zoom, and identify
    - Attributes and Features
    - Saving a QGIS Project
3. Coordinate Reference Systems
    - What are Coordinate Reference Systems & Projections?
    - Changing CRSs in QGIS
    - Using the "Identify" tool for raster layers
4. The Print Composer
    - Saving and printing your map using a Print Composer
    - Creating and managing multiple Print Composers
5. Map of Wolfville
    - Different ways to display point, line, and polygon data
    - Displaying raster data
6. Getting GIS Data Online & Basemaps
    - Some online GIS data sources
    - Using the Quick Map Services Plugin as a basemap
7. Importing data into QGIS
    - Import data from a spreadsheet
    - Import data from a GPS
    - Import data from Google Earth
    - Export data from Google Earth/Spreadsheet

Day 2: Creating, Manipulating, and Analyzing GIS Data

8. Creating a Nova Scotia Study Site Map
    - Import KML data from Google Earth to create a study site map in Nova Scotia
9. Creating Vector Layers
    - Create line data with attributes
    - Edit and move existing data
10. Interpolation & Contouring
    - Contour point data using interpolation and contouring
    - Learn how to use the processing toolbox to manipulate perform analyses on vector and raster layers.
11. Vector Processing
    - Import census data and use the Join feature to examine demographics in the Halifax Regional Municipality
    - Use the select by expression tool to select specific pieces of your vector data
    - Use a graduated layer style to create a map highlighting spatial differences in demographics.
12. Participant Requests
    - Interactive session going over other applications of GIS to participant projects.