**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**

1. Creating a Nova Scotia Study Site Map
   * Import KML data from Google Earth to create a study site map in Nova Scotia
2. Creating Vector Layers
   * Create line data with attributes
   * Edit and move existing data
3. 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.

1. 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.

1. Participant Requests

* Interactive session going over other applications of GIS to participant projects.