Writing Assignment - Technical Instructions

Introduction
ESPM4295W holds the writing-intensive designator. As part of meeting these requirements, you will write a technical guide for some type of spatial analysis. The analysis is typically associated with the project you are performing for this class, but you may submit an alternative for approval. As part of this exercise you will provide data, review another student's guide, and incorporate suggestions into your training guide.

The guide should be comparable to a part of a typical lab exercise most of you completed in FNRM 3131. For example, instructions for the buffers and overlay lab included a brief description of the theory behind buffering and overlay, an example showing the specific steps, and then what the results should look like, both for buffering and a few variants, and for an overlay. You will create something similar.

Requirements
You should place a descriptive title on your technical guide. You will be required to have the following headings/sections:

Introduction - a few paragraphs describing what you'll be doing, and why it is important
Goals - the specific reason you are doing this - what you expect the person to know how to do, what you hope to do with this guide
Data required - input requirements, e.g., raster data set of elevation, vector of stream locations, etc.
Outputs - the data, numbers, or other information the analysis steps produce

Background - A broader description of the task - what it does, when it might be common, why you would want to do it, common variations to the task

Steps - A description with an example, including screen captures of relevant input steps and outputs.

There are no requirements for length, but I would expect most of your documents will contain between 6 and 10 pages, including figures, with the writing equivalent to about 2.5 to 5 single-spaced pages, and figures taking up the rest of the space.

You will be required to provide an example of the data used in illustrating your method, and you should use data for your study area, or yours and an adjacent study area. Although most data will be from those you created and you use in your analysis, it does not need to be. You may use other data if you are interested in a related topic.
Topics
You will need to select three topics from the following list, and provide your order of preference (1st, 2nd, 3rd) to the instructor, via email:

• Calculating a raster to vector, and vector to raster conversion. Illustrating the conversion with point, line, and polygon data
• Calculating a neighborhood weighed average of a raster, with the raster surface you are averaging in one layer, and a separate weighting layer
• Burn flow lines from storm sewers or ditches into a DEM, and calculating flow direction
• Identifying internal sink areas in a DEM
• Calculating the flow direction, flow accumulation, and watershed boundary for a study area
• Creating an aggregation table that sums attributes by contiguous raster areas
• Perform a summation across a friction surface
• Calculate percentage of ground hits from a LIDAR data set

Tools
You should be able to create this using MSWord or your favorite word processing software. You should have access to screen grabbing software on your computers, for example, the "snipping tool" in windows 8, available via

Start Button - All Programs - Accessories - Snipping Tool (see figures below)