

General Guidelines for Written Assignments

You will write a report describing your project, built with consecutive documents submitted during the course of this class. You'll first submit an introduction. I'll review it, and provide examples of aspects that need improving. These will only be examples, and you will need to review the entire submission to look for other instances of the same error, and fix it. Just addressing the specific instances I point out is usually not enough. Through these, we seek to improve your writing skills. The end report should be professional documents, similar to those you may well be writing during your career.

We will provide rough guidelines for each writing assignment in separate instructions, detailing approximate length, sections, and content.

Your goal is to generate a clear, readable, concise, but complete final report. Each iteration should improve on the previous submission, and include a new section. Your documents should be free of spelling and grammatical errors. The quality of the writing counts.

The report is directed at an individual that does not have any familiarity with your work or the topic. Assume the individual knows there is such a thing as GIS and hydrology, but doesn't know why mitigating runoff is important, nor much about the specific study area, nor GIS functions or methods. You do not have to define terms such as metadata, buffer, digitize, or GPS, but you do have to describe the goals, motivation, location, and other important details for each assignment. Write each such that a person unfamiliar with the setting, question, and geography of your activity would be able to understand what you did, repeat the procedure, and believe your statements or conclusions. Some insights into the important factors and the general conclusions you draw from your analyses should be included.

You should describe your specific methods so that a person can evaluate or repeat your actions, but in a general way. For example, you need to indicate the target number of GPS position fixes per point, or the date and source of the images you used for digitizing, the snap tolerance, and other defining characteristics of any methods used during data collection. You should not describe the buttons you pushed on the GPS receiver, the name of each file you created, nor the specific ArcGIS commands and their sequence.

The methods section should not be a chronological narrative. By this I mean do NOT write in a style similar to:

"First I used the buffer function to buffer roads with buff_dist of 30 and saved these in a file named rdbuf1, then I did the same with a buff_dist of 60 and saved that in rdbuf2, then I did the same with a buff_dist of 90 and saved it in rdbuf3.

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Then I used the overlay function with rdbuf1 and rdbuf2 and saved that in rdbuf_comb1.”

Rather, use the more general:

“Road buffers at various distances were required for my analysis. Roads were buffered at 30, 60, and 90 meter buffer distances. Resultant layers were overlain to create a nested set of buffer distances around roads.”

Do NOT use the names of specific ArcMap operations, as in “I used the Buffer tool” or “the CON functions was applied in Raster Calculator.” Rather, use the more general “I buffered point features ..” or “Values were re-assigned using a conditional function...”

You will need maps, tables, and/or other figures for most of the documents. This should include relevant photographs or figures from class or internet sources in the introduction, e.g., examples of rainfall/runoff, or development, or pollution. Exterior sources must be acknowledged in the figure caption. Most figures in the methods and later sections will be generated in ArcGIS from data you create or modify, some with word processing or drawing software, and some may be screen captures. The most important graphics and tables should be embedded in the main body text. Additional graphics and tables may be included in an appendix. At a minimum, the body of each report should include graphics showing the general and specific study area you analyzed, and graphics for each main data layer used for each of your analyses.

You must include section headings, but there are no fixed set you must use, these vary by the writing assignment. In most assignments you need to introduce the work, identify the goals, and describe the activity focus. You need to describe the activities or methods. Perhaps the hardest part will be a succinct explanation of the analysis methods and results, followed by a discussion of the importance, significance, and reasons behind your conclusions.

All figures and tables should have headings, all maps should have scale bars, north arrows, and descriptive legends, and all figures, maps, and tables should be referenced in the body of the report.

Report due dates are in the course pages and assignments.

Some of the reports will require you to submit drafts, but you SHOULD NOT turn in your first draft. Rather, you should produce several “personal” drafts which you read and edit prior to each of the formal drafts you turn in. You should revise each draft, proofing and improving it yourself. You will also proof/evaluate another student’s work for at least one of the assignments. You will not assign a grade to your peer.

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However, you will be graded on the quality of your recommendations of the other student's work.

I will emphasize the following criteria in evaluating each writing assignment:

Is the writing clear, concise, grammatically correct, and complete?

Is the report well-organized?

Was the work done well, meaning all data collected with apparent diligence, and the analysis appropriate and correct?

Are the work and report complete? Are all the parts there, including, appropriate figures, summary of metadata and/or other relevant information in appendices?

Does the report contain the appropriate amount of information? Is the report too detailed? , Is the report a personal narrative, or too vague?

Ask yourself the following questions: Are your methods described such that a person could reasonably evaluate what you did? Could they repeat your exercise, given they are adept with the hardware and software. Did you think about the results critically, and describe why you came to your results and conclusions? Did you think about how robust your results and conclusions were, and how different methods or approaches might change your results or conclusions? Are the graphics appropriate, informative, and attractive?

I've provided example documents on the course website. These are all longer than the work you'll produce, because they were created by teams working on larger problems over a longer time and bigger areas, but they are good examples of the level of detail, the use of supporting figures and graphics, and the writing styles that will meet the needs of this report.

Formatting Guidelines

Generally, the drafts are 1.5 spaced lines, 10 or 12 point font, one inch margins.

You don't need a table of contents or title page.

All pages should be numbered.

Paragraphs should be left justified, the first sentence indented, with a blank line between paragraphs.

You should include figures in the body for your existing conditions (canopy, buildings, landcover), and figures that show your modifications for each rainfall mitigation level.

You should include figures in the main body, one each containing runoff for each of your primary conditions, i.e., for each base and mitigated level.

All figures or tables should have a numbered heading, a left-justified caption that is 10 point font or larger that describes figure contents, and all figures and tables must be referenced in the text.

Figures and tables should not span pages, that is, any single figure or table should be contained within a page.

You should wrap text above and below large figures.

Do not leave large blank spaces due to spacing around figures, generally no more than four blank lines.

Fonts and writing within the figure themselves should be the equivalent of at least 9 point or larger. Note that effective font size in a figure is not the same as that you set in ArcGIS, because you may shrink a figure to fit in your report. Make sure the legends, titles, labels, and other writing in a figure or table are readable, the equivalent of a 9 point font or larger after formatting.

You should leave one or two blank lines before each new section heading, but be consistent with your choice.

New section headings should be in a bold font.

There should be no orphan headings, meaning that each heading near the end of a page should have at least three lines of the following section on that same page.

You should have an appendix with at least figures of all data layers, and more detailed information you don't want to include in the main document, but do want to include in the report.