Instructions for the ES296 Research Project Report, Winter 2021

This document provides an outline of how to complete the Research Project under the unique conditions of remote learning – it is not representative of 'normal' practices in ES296!

Be sure to read Chapter 4 in "Communicating in Geography and the Environmental Sciences" by Hay & Giles (see the syllabus) for a detailed explanation of how to write a Research Report.

You should also consult the many research tutorials and handouts provided on Laurier's Library page (links are posted on the ES296 MLS course page). I expect that you consult those resources as you write your Research Report.

This document has three sections: Purpose, Task, and Criteria for Success

1) Purpose

The purpose of this Research Project is to:

- apply the concept of sustainability to a real-life problem
- improve your research skills
- practice your professional writing and presentation skills
- prepare you for a variety of tasks you will encounter in your professional life

In more specific terms, this Research Project will challenge you to show your mastery of:

- *course concepts and textbook content*
  - can you *correctly* use concepts and terminology from the textbook?
- *secondary literature research methods*
  - can you find/evaluate/integrate *good professional and academic* sources?
- *academic conventions*
  - are you able to *properly* integrate, format, and cite quoted material?
- *writing* for a critical educated audience
  - can you write with proper logic, tone, clarity, style, grammar, spelling, and punctuation?
- *presentation skills*
  - can you design and deliver a professional-level presentation?
    - instructions will be provided in a separate document

2) Task

Your task in this Research Project is to:

- select a problem from the list provided by the municipality
- conduct some 'scoping' research that helps you understand and address the municipality's specific problem
- search the literature for examples of 'best practices' that have been applied to similar problems

- transfer insights from your research to the municipality's problem and review options for addressing it
- recommend one or several preferred options and explain your reasoning
- write up a professional Research Report for the municipality in which you detail your findings
    - be sure to incorporate feedback at every stage of the report writing
- give a professional presentation to the municipality in which you summarize your findings

Step One: select a problem from the list provided by the municipality

Step Two: understand the problem better by doing some 'scoping' research

- "Research is the process of going up alleys to see if they are blind" (Mosquito Zoologist Marston Bates, quoted in Hay & Giles, p. 62)
- the purpose of this stage is twofold:
    - **become informed about the problem you chose and the topic in general,** and
    - **develop an idea of what to look for in particular** as you begin to search for more specific, professional and academic sources in Step Three
- as intimated by the quote above, your research will frequently end in a dead end. Don't worry, this will help you better define the area in which you can search more fruitfully!
- start by researching the issue in the way you usually would
- in this 'scoping' stage, you can consult popular sources and platforms such as Wikipedia, **but only for the purpose of building your general understanding of the topic.** Your actual Research Report should be built on professional and academic sources (see below)
- once you are more informed about your concept and the topic in general, you are ready to begin the next, more specific stage of your research

Step Three: search the secondary literature for professional and academic sources on which to build your Research Report

- through the library system, find professional and academic publications that examine the subject matter of the problem you want to examine
- your goal is to find 'best practices', which are solutions to similar problems that other authors have reported in the literature
    - this is the point of secondary literature research: you want to learn from the methods and conclusions other authors have put forward
    - in other words: don't re-invent the wheel, but build on the work of other authors – and be absolutely certain to properly cite their work!

Step Four: transfer and apply those insights from the secondary literature to your problem

- evaluate whether the solutions you found in the literature could work for your specific problem
- identify one or several preferred options and **explain why you think these are the preferred options**
    - this is a **crucial** part of your Research Report: it shows that you can find good material, know how to analyze it, and are able to draw conclusions from it!

Step Five: write up your Research Report as per the standards given below

3) Criteria for Success

In terms of format, your Research Report should:

- be 3 pages in length per team member (i.e., 15 pages for a five-person team)
    - 15 pages are equivalent to just under 4,000 words
- this count includes ONLY the text-heavy sections 4 -8 listed below (Introduction, Literature Review, Discussion, Conclusion, and Recommendations). All other sections are over and above that word count
    - in other words, your total document should be longer than 15 pages
- be written in 12-pt font, double-spaced, with one-inch margins
- have page numbers
- have a title that clearly expresses what your Research Report is examining
- be divided into the sections listed below
- be submitted to the MLS dropbox by midnight on April 2
    - note that the presentations begin on March 30 already!

In terms of structure, your Research Report should follow these guidelines:

Note: the following guidelines are based on the advice given in Chapter 4 of: Hay, I. & Giles, P. (2015) *Communicating in geography and the environmental sciences*, (2nd Canadian ed.) Don Mills, ON: Oxford University Press Canada. **Please refer to that chapter for general guidance and more detailed explanations of each of the components of the Research Report.**

As Hay & Giles write (citing Eisenberg 1992), a Research Report should address the following overarching questions:

1. What did you do?
2. Why did you do it?
3. How did you do it?
4. What did you find out?
5. What do the findings mean?

Based on Hay & Giles, I recommend that you divide your Research Report into the following distinct sections. Exactly how you address the five questions across these sections depends on your specific topic and you writing style. For more detailed information on each of these sections, please refer to Chapter 4 in Hay & Giles.

1. Title Page
2. Abstract/Executive Summary
3. Table of Content
4. Introduction
5. Literature Review
6. Discussion

7. Conclusion
8. Recommendations
9. Reference List
10. Appendices

Here are a few explanations that are specific to the Research Report you are undertaking in ES296:

1. The **Title Page** should contain the title, your names, and the due date.

- do **NOT** include your student numbers as the Research Report will be made accessible to the municipality

2. The **Abstract/Executive Summary** will be your showcase section in which you must clearly and concisely communicate to your readers on the Township Council what the outcome of your research is.

4. In the **Introduction** you establish the context for the rest of the Research Report:

- you introduce the subject matter
- you state why this report and the topic are relevant and important to investigate
    - In other words, you answer the 'so what?' or 'why bother?' question
- you briefly explain how you are going to investigate the issue
- the Introduction should not be longer than one or at most two pages

5. In the **Literature Review** section you place your Research Report into the broader context of what has been written about this problem in the literature:

- you will draw mostly on professional and academic publications
    - you may use popular resources to learn and provide some general contextual information, but you should be careful to base your Research Report on professional and academic sources
- you provide enough information to the reader so s/he is able to understand the problem you are investigating and evaluate the merit of your proposed solutions
- this section is where you show your RESEARCH ability (through the quality of the sources you use) and your ability to ANALYZE the sources (by explaining how they relate to your problem)
- the Literature Review should make up *roughly* one third to one half of your Research Report

6. In the all-important **Discussion** section you *explain* and *interpret* what you found:

- you discuss how your findings from the secondary literature relate to your problem
- you show your UNDERSTANDING of the various perspectives you have found and your ability to EVALUATE and SYNTHESIZE them into a cohesive standpoint of your own
- you explain how your findings support the recommendations you are making in the Research Report
- the Discussion should make up *roughly* one third to one half of your Research Report

7. In the **Conclusion**

- you summarize how your research has addressed the problem
- you reflect on the lessons you have learned in the process of doing this project
- you suggest what you might do differently if you had to do a similar project again

8. As a courtesy to your readers on the Township Council, you may want to include a **Recommendation** section in which you briefly summarize the recommendations you would make for solving the municipality's problem.

9. The **Reference List** must contain all materials you use in writing the Research Report

- It is crucial that you state all sources of information you use in a *properly formatted* bibliography. There are several conventions regarding the formatting of bibliographies. I suggest that you adhere to the APA format commonly used in the social sciences. If you major in the humanities or natural sciences and would like to use the system commonly used in your discipline, talk to me.
- Your Research Report must be based on *properly cited professional and academic* sources. Please refer to the Laurier library homepage and the Writing Centre homepage for the many available resources regarding Information Literacy (e.g., how to find reliable academic information, how to cite sources properly, how to incorporate secondary information into your own writing, and how to avoid committing plagiarism). Much of this information is linked under 'Resources for your Research Project, but you may want to seek out additional resources.
- **"How many sources do I need for this Research Report?"** As a *very crude rule of thumb that is valid for this Research Report only*, you should build your Research Report on a minimum of one new professional or scholarly source per page of text (i.e., 15 pages require a minimum of 15 different *professional and academic* sources in total).

Style, expression, grammar, punctuation, and spelling will be considered in the grading as they form an important part of any written communication. If your argument is strong but your writing is weak, your Research Report will be weak too because the reader will be left wondering whether what you wrote is what you really meant. Let me use this opportunity to pass on to you some of the best advice I have ever heard: "A B paper is an A paper that was handed in too early." I strongly advise that you have someone proofread your Research Report and give you feedback on content, flow, logic, and presentation. **You are always welcome to ask me for feedback at any stage** of the Research Report.

Some advice worth repeating:

- start early and ask me questions frequently
- take the meetings with your team partners seriously and give each other solid support
- use the services of the reference/research librarians and of the Writing Centre
- do not base your analysis on Wikipedia or Google searches
- do not rely on web sources only, they cover only some of the information out there
- in your writing, take it easy on background, but go **heavy** on analysis and discussion
- a good Research Report is one part creative thinking, one part writing and one part editing
- if you are not excited about your Research Report, how can anyone else be?
- you may say you've heard all of this before, so why I am repeating it here? Because some students ignore this advice and thus end up with a Research Report (and a course grade) that is lower than what they are capable of. I want you to achieve the best grade you are capable of!

The following Grading Guide has been adapted from Cornell University's Cole Library Center for Teaching and Learning.

While it was originally intended for assessing a Research Paper (which is different from a Research Report – see Hays & Giles p. 62), the general criteria for success are easily transferable to a Research Report.

Please note the difference between an A paper and a B paper: to achieve a grade of A, a paper must do better than to fulfill the assignment well!

A Paper: This paper does not just fulfill the assignment, it also has something original and important to say and the points it makes are supported well. It is organized effectively, develops smoothly, and it is written clearly and correctly. It is based on data or a review of the literature clearly related to the points it has to make. The sources cited are authoritative, current, and appropriate in scope and quantity. Findings from the literature are integrated into a readable essay. The conclusion suggests that the writer has synthesized the literature, reflected on it and arrived at a position, stand or perspective on the topic. It is correct in mechanics and APA citation style.

B Paper: This paper fulfills the assignment well. Its general idea is clear and it is effectively presented. It handles its sources well, with no serious errors of fact or interpretation. It reports on adequate literature, but sources are not as authoritative or current as they should be. Generally, the paper is correct in usage, appropriate in style, and correct in mechanical standards of writing, including bibliographic citation.

C Paper: This paper is adequate to fulfill the assignment, but it might be better described as an annotated bibliography. Points may be hard to follow and the paper may be poorly organized (e.g., unbroken narrative with no headings or clear relationships; literature review that summarize sources in sequence instead of synthesizing points supported by references). Sources of information are poorly chosen --insufficient in number, of inappropriate types, too old, lacking in authority, etc. There may be errors in usage, the style may be inappropriate for the assignment, or there may be errors in mechanics of writing or citation.

D Paper: This paper meets only the minimum requirement of the assignment. The paper may lack adequate focus and instead attempt to cover too broad a topic. There may be serious error of fact or interpretation. Cited information comes from no authoritative sources in this field. Citations are incomplete or inaccurate or are formatted incorrectly.

F Paper: This paper does not fulfill the assignment. It may omit important material lying within its declared scope or make repeated errors of fact or interpretation.

The following [Research Paper Rubric](#) has been adapted from Cornell University's Cole Library Center for Teaching and Learning.

The rubric is originally from: Whalen, S. "Rubric from Contemporary Health Issues Research Paper" http://academics.adelphi.edu/edu/hpe/healthstudies/whalen/HED601_r2.shtml

	Expert (A)	Proficient (B)	Apprentice (C)	Novice (D)
Integration of Knowledge	The paper demonstrates that the author fully understands and has applied concepts learned in the course. Concepts are integrated into the writer's own insights. The writer provides concluding remarks that show analysis and synthesis of ideas.	The paper demonstrates that the author, for the most part, understands and has applied concepts learned in the course. Some of the conclusions, however, are not supported in the body of the paper.	The paper demonstrates that the author, to a certain extent, understands and has applied concepts learned in the course	The paper does not demonstrate that the author has fully understood and applied concepts learned in the course.
Depth of Discussion	In-depth discussion and elaboration in all sections of the paper.	In-depth discussion and elaboration in most sections of the paper.	The writer has omitted pertinent content or content runs-on excessively. Quotations from others outweigh the writer's own ideas excessively.	Cursory discussion in all the sections of the paper or brief discussion in only a few sections.
Cohesiveness	Ties together information from all sources. Paper flows from one issue to the next with the use of logical transitions. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	For the most part, ties together information from all sources. Paper flows with only some disjointedness. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	Sometimes ties together information from all sources. Paper does not flow - disjointedness is apparent. Author's writing does not demonstrate an understanding of the relationship among material obtained from all sources.	Does not tie together information. Paper does not flow and appears to be created from disparate issues. Headings are necessary to link concepts. Writing does not demonstrate understanding of relationships.
Spelling & Grammar	No spelling and/or grammar mistakes	Minimal spelling and/or grammar mistakes.	Noticeable spelling and grammar mistakes.	Unacceptable number of spelling and/or grammar mistakes.
Sources	More than 15 current scholarly sources that are relevant for the task at hand. Non-academic sources, special-interest sources and popular literature are acknowledged as such. All web sites utilized are authoritative.	Fewer than 15 current scholarly sources, or more than 15 current scholarly sources of which some are not relevant. All web sites utilized are authoritative.	Fewer than 10 current scholarly sources, or more than 10 current scholarly sources of which some are not relevant. All web sites utilized are credible.	Fewer than 5 current scholarly sources, or more than 5 current scholarly sources of which some are not relevant. Not all web sites utilized are credible.
Citations	Cites all data obtained from other sources. APA citation style is properly used in both text and bibliography.	Cites most data obtained from other sources. APA citation style is properly used in both text and bibliography.	Cites some data obtained from other sources. Citation style is either inconsistent or incorrect.	Does not cite sources.