General Considerations
Research Proposals should be type written and double spaced on good quality paper using 12 pt font (e.g., the same as this set of guidelines) with adequate margins (e.g., 1 inch) all around. Pages should be numbered consecutively, starting with the Abstract page. The proposals should be 5-8 pages in length (i.e., minimum of 1500 words) and consist of the following sections:
Title Page
Abstract
Preliminary Literature Search
Proposed Research Project
Planned Methods
References

Each of these sections is explained in detail below.

Section Details

Title Page
The title page should include your name, the title of the proposal, supervisor’s name, advisory name, course number and date of submission. The title of the proposal may or may not be the same as that of the final thesis, depending upon how the work progresses. Nonetheless, the title has two main functions: to identify the topic or message of the work and to attract readers. The title should accurately, completely and specifically identify the message or topic. Titles should be unambiguous and concise.

Abstract
The abstract is probably the most difficult section of any paper to write. It has to be both a brief introduction to the paper as well as a summary of the contents. It should be written in clear, concise language, and be no more that 150 words. It should clearly state the hypothesis upfront. The Abstract describes the work of the authors; the work of others is not typically included in the Abstract. If properly written, the abstract will lure the reader in, eager to read the rest of the paper.

Preliminary Literature Search or Introduction
Preliminary Literature Search is a fancy name for an introduction. For the research proposal, this section should comprise up to half of the written work. The intent is to summarize the current state of the subject you are going to study, and provide a rationale or context for the work you are going to propose in the following section. This is necessary since in most cases your project will be part of a larger one and in order to make your proposal make sense you need to
outline the broader context in which it fits. This section should contain a clear statement of the hypothesis under study. When done properly, the reader will be led to the same conclusion you have already come to: the work you are about to propose is both a logical extension of the work that has preceded it, and a necessary contribution to the field of study. This section is entitled “Preliminary” since it is recognized that by the time you complete your research, you will have done more reading on the subject, and the literature search you provide in your final thesis will be more complete than the one you are able to do for your proposal.

Please be aware of and avoid the “lazy author syndrome” (Gavras, 2002), in which authors cite the author(s) of the latest review article as the source of scientific findings rather than the original paper itself. This can lead to and perpetuate information errors because the review authors may have misinterpreted or misquoted the original paper. It is best practice to cite only papers you have read. If Jones (2006) wrote a review article and cited the work of Whiteman et al. (2000) to support a particular argument, don’t assume Jones has correctly cited Whiteman et al. (2000). If you want to use Whiteman et al. (2000) in support of an argument, read the original paper.

**Proposed Research Project**
In this section, you clearly state the objectives of your project, and outline the goals you expect to achieve, in the context of the hypothesis presented in the introduction. To be effective, this section should be brief and to the point (i.e., about half a page). A bulleted or numbered list is an effective way to list your objectives clearly. This is one section in your report where you will need considerable consultation with your supervisor, since he/she will be able to help you define realistic objectives and goals for your thesis. Ultimately your advisor will evaluate these objectives and goals with the intent of determining if they are realistic within the context of a Biology 4970G thesis.

**Planned Methods**
In this section you need to provide some detail about how you plan to carry out your research project. You do not need to provide elaborate details about specific techniques, but you do need to justify your choices. For example, you might outline a general scheme for an experiment, or provide an example derivation for a calculation. A flow chart is very useful to clearly outline what you plan to do. As with the Preliminary Literature Search, you need to cite references to published methodologies. Again, cite the original source, or if the method has been modified, cite the modification.

**References**
For the purposes of your proposal (and later for your final thesis) you will need to cite appropriate scientific literature. A convenient method for citing references in the text is the name and date method, e.g., (Author, 2003), (Author and Author, 2003) or (Author et al., 2003) when there are three or more authors. When
multiple references are used for a given point, place them in chronological order, separated by semi-colons. Papers are then listed in alphabetical order (according to the first author’s surname) at the end of the paper in the reference section. Please take the time to ensure that all references are cited correctly (e.g. correct year, journal volume, pager numbers) and that all references cited in the text are in the reference list and vice versa. A suggested format for cited papers is shown on the next page. Whichever citation format you choose, be consistent and only use recognized abbreviations.

For research articles:
Example:

For books and chapters in books:
Example:

Web Sites
Author’s name (last name first). Document title. Date of Internet publication. Date of access <URL>.
Example:
Hryciuk, Dennis A Dwindling Legacy on the Brink *Endangered Species of Canada’s, Stories by the Edmonton Journal* December, 1999 September 4, 2008 http://raysweb.net/specialplaces/pages-species-ej/dwindlinglegacy-ej.html