

## **Research Methods & Technical Writing**

### **Assignment 3**

#### **Research Proposal**

**Due date: Sunday 8<sup>th</sup> May 2025**

**Your assignment should be no more than 12 pages long plus your reference list.**

A research proposal should cover three main points:

- 1) Explanation of proposed research (**what will be done**)
- 2) Methods and techniques to be employed (**how it will be done**)
- 3) Novelty and/or importance of the study (**why it should be done**)

#### **Important Points to Remember**

- An organised, well-written, concise, complete proposal = an easier to conduct experiment
- Good writing when paired with a thorough understanding of the subject matter is a valuable skill to possess.

#### **Project Proposal**

1. Title
2. Abstract (one paragraph)
3. Introduction/Background
4. Problem Statement
- 5. Literature Review**
6. Research Hypothesis
7. Materials and Methods
8. Conclusion and Justification
9. References

#### **Formatting**

Use **1.5 line spacing** for all text. All text should be justified. The **font** size should be **12 pt.** in **Times New Roman**. Sections within the main text should be appropriately sub-headed. All main **headings** should be in bold, capitalized, font size 14pt. and aligned to the left. All **sub-headings** should be bold, font size 12 pt. and aligned to the left. Create a **header** in your document that displays your name left aligned. Insert page numbers in the **footer** of your document in the bottom centre, type "Page 1 of 1". Omit this from the cover page. **Spelling** should conform to the **English (U.K.) dictionary**.

[Use the template provided.](#)

Include information under the following 9 headings:	Assignment tips
<b>1. Title</b> This should provide a specific summary of the proposed work	<b>Example 1:</b> <b>NO</b> (too much detail) “A case study of 60 liver transplant patients around the US aged 20-50 years assessing the impact of waiting list volume on outcome of transplantation and showing a positive correlation between increased waiting list volume and a negative prognosis.” (Word Count: 38) <b>YES</b> “Assessing the impact of waiting list volume on outcome and prognosis in liver transplantation patients” (Word Count: 15)  <b>Example 2:</b> <b>NO</b> (not enough detail) Are white mice better than gray mice? <b>YES</b> , when tested for intelligence and longevity, how do white mice and gray mice compare?
<b>2.Abstract (one paragraph)</b>	This is a brief description of the hypothesis and the goals of the experiment. It should indicate what questions you, as a researcher, will be seeking to answer. An abstract provides a summary that allows readers to quickly assess the basic premise of your proposal.
<b>3.Introduction/Background</b>	Background or introduction section provides a description of the basic facts and importance of the research area - What is your research area, the motivation of research, and how important is it for the industry practice/knowledge advancement?
<b>4.Problem Statement</b>	Problem statement provides a clear concise description of the issues that need to be addressed - What is the specific problem in that research area that you will address (e.g., lack of understanding of a subject, low performance ...)?
<b>5.Literature Review</b> ***A note on sources, paraphrasing, and citations: Unlike the style you might use in English descriptive writing, technical science writing is concise, clear cut, and lacking in artistic enhancements. When using information from a source avoid quoting directly. Read the piece, put the article down, and then put the important points into your	You should begin with the basics of your research topic and then narrow the focus of those details that are especially pertinent to the proposed work. You are laying the groundwork for your proposal with the material that you present. Use a plethora of sources especially primary sources such as journal articles. Textbooks, web sites (with great caution) and personal experience and observations can also be useful sources. Make sure to cite appropriately in the text.  This is the heart of your assignment and will probably be the longest piece of it. Your sentence structure should look something like this: <ul style="list-style-type: none"> <li>• “According to [1], nitrate removal rates were highest in those wetlands that contained a diverse number of plants species.”</li> </ul>

<p>own words. By setting the article aside you are allowing yourself to process the information, instead of just spitting the idea back out in a slightly altered sentence.</p> <p>Citations should be [1]. (See examples opposite).</p>	<ul style="list-style-type: none"> <li>• “Within organisms’ cellular nitrogen generally exists as either ammonia-nitrogen or amino-nitrogen, which are the most reduced forms of nitrogen [2].”</li> </ul> <p>Never leave your reader in doubt as to the source of your information! Cite thoroughly and cite properly.</p>
<b>6.Research Hypothesis</b>	<p>What is the hypothesis that you are testing? What are the questions that you seek to answer? Based on what is known in this field, explain what you expect to see and hope to show through your result? This is where you share your thoughts.</p>
<b>7.Material and Methods</b>	<p>Research methodology defines the research methods and logic steps - What to do and how to solve the problem and achieve proposed objectives? Which research methods (e.g., survey, modelling, case study ...) will be used? Describe your proposed experiment in depth. What processes are you going to use? What kind of equipment and supplies will be necessary for the project? What will you use for a control, and what will be your replicate? Be thorough, but not excessive. Include a project schedule Gantt Chart for planning and executing your research project. This will be useful to construct before completing your Material and Methods section, as this will give you an idea of what should be occurring when, and if your goals are attainable in the given timeframe.</p>
<b>8.Conclusion and Justification</b>	<p>Your literature review will have already helped to lead the reader to an understanding of why your topic is of importance. This is where you will explicitly state how your proposed research will advance knowledge. What are the far-reaching effects? Will your study potentially change practices or policies?</p>
<b>9.References</b> using the Harvard Style for Horticulture	<p><b>Use the referencing tool in word to manage your references</b> (Make sure to select the IEEE as your reference style before entering any references into your document). Double check all information in your reference list. Remember you must use quality sources e.g., books, journal articles and industry magazines.</p>