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# PHSI2905 Advanced Assessment Task 1

The first assessment task for the advanced stream has two parts. Part 1 is a group lab report to be written up based on the data you collect in the Neuromuscular Junction practical. The second part is an abstract to be written individually which summarizes the group report you helped write.

## Part 1 – Practical Lab Report

### Content

**Introduction:** Provide essential background and rationale for engaging in the endeavour in the first place.

**Aims/hypothesis:** State explicitly what you set out to do. What specific hypotheses/predictions were you testing?

When you are generating hypotheses, you are making a prediction of possible outcomes based on previously obtained information.

This section can be integrated into the Introduction.

**Methods:** It is always important to provide enough information about what you actually did, so that someone else in the field can repeat your work. Of course, it is not necessary to repeat in exhaustive detail what was outlined in your prac notes. You can assume some familiarity with the preparation or methods from your readers. In fact, it is perfectly reasonable to refer to the notes when writing your own Methods section (e.g., “…used methods described previously (ref). Briefly…”). If there was anything specific you did, however, that varied from the notes, you should describe it in reasonable detail. In particular the specific treatment your group performed should be described so your reader knows what you did

**Results:** The results section must describe your data. Make good use of figures and base your description on these. You will find that showing something graphically can simplify considerably your ability to communicate difficult concepts and results.

**Discussion:** What did you find? Do your results confirm or reject your hypothesis? You should explain why your results shown what they did. The findings of biological experiments can be tricky to interpret. It is your job in the Discussion section to clarify the meaning of your findings, the significance of your observations, and outline possible future directions of research. Often results are explained in the context of previous work. References here are essential.

Often (especially on the forefront or cutting edge of a particular discipline) said information is not available. You may have to piece together seemingly unrelated observations to come up with a reason as to why you want to explore a particular topic. Moreover, you will find that taking measurements from inherently dynamic systems like biological tissue can be quite variable. Thus, simple predictions may not yield clean, easy to interpret results. One approach might be to put forward your own explanation for what occurred based on your understanding of the mechanisms at work, then seek explanations for similar findings from the literature, these will either support or refute your interpretation. Then simply compare and summarise the two explanations and state what conclusions you draw from them.

**Figures and figure legends:** A picture speaks a thousand words, and this is clearly the case in scientific reporting. Figures should always be labeled appropriately: always identify axes, markers, and symbols. For anatomical plates, always indicate scale by providing scale bars. Legends should start with a brief summary of the figure, followed by a more detailed description of the information provided by the graph, image, etc.

**Cover Sheet:** Fill in the cover sheet (Assessments > PHSI2905 Assessment Information > Cover Sheet - Lab Report.doc) and submit with your lab report.

Here are some further guidelines regarding the written assignments:

1. Referencing
   1. Use either the author, date arrangement (used in Neuron) or numbered formatting (superscripts within the text (re: Nature). A variation of the former is standard in many journals, while the latter is often used in short articles. Numbering does save space, so if you find yourself struggling to fit your essay within the length limits, this may be the way to go.
2. Figures
   1. Figures are vitally important. Often complex or even simple ideas (particularly in the context of describing neural circuits, e.g., when writing a review) that are hard to describe with words become trivial when presented graphically.
   2. Please refer explicitly to your figure in the text of your report. Often students embed figures into their narrative. This may be OK for a standard prac report, but how often do you see this method employed in an actual paper? When submitting manuscripts for publication, you cannot assume that the placement of the figure will be close to where you actually describe the material in your text.
   3. Figure legends are important. They should be easily distinguishable from the rest of your narrative. A short summary statement/title can help.
3. Subheadings
   1. Subheadings in the Methods, Results, and Discussion sections can be useful for organizing your thoughts as well as highlighting important points for your readers.

### Final Thoughts

You will find that 8 pages is not a whole lot when you take all of the above into consideration. Remember, the point of scientific writing is to communicate your findings, and their potential significance. Good luck!

**Word Count:** None specified. A maximum of 8 pages (can be shorter)

**Style:** Double spaced, 12 pt, in a standard font (e.g., Arial, Times New Roman) minimum 2cm margin right, left, top, bottom. Eight page limit includes figures and figure legends; references NOT included.

**Due Date:** Week 13, Wednesday, 01 June 2015

**Due Time:** 11:59pm

**Submit:** Electronically via Turnitin on Blackboard

**Percentage of final mark:** 10%

## Part 2 - Abstract

### Purpose/Content

The abstract serves as a brief “summary” of your report. Different journals use different formats: some require subheadings for each section, while others do not. For this assignment, you will not need to include any headings. The abstract should, however, provide the following information:

1. A summary of the main objectives of your study/experiments;
2. A brief mention of the methods (without methodological detail) including animals used;
3. A summary of the main results; and
4. A brief statement describing the significance of your findings. Avoid abbreviations as well as citations for this document.

**Cover Sheet:** Fill in the cover sheet (Assessments > PHSI2905 Assessment Information > Cover Sheet - Abstract.doc) and submit with your abstract.

**Word Count:** 300 words.

**Style:** Font 12 pt, in a standard font (e.g., Arial, Times New Roman) minimum 2cm margin right, left, top, bottom.

**Due Date:** Week 13, Wednesday, 01 June 2015

**Due Time:** 11:59pm

**Submit:** Electronically via Turnitin on Blackboard

**Percentage of final mark:** 5%

**Lab Report Marking Sheet**

Student: SID:

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Statement** | **Max Mark** | **Mark Awarded** |
| **Title** | Did you include a title? Is it concise and to the point? | 4 |  |
| **Introduction** | Relevant background, concepts and context provided. Background, concepts and context linked to aims. | 10 |  |
| **Aims (not a discrete section)** | Aims are stated (Note: You are not required to start with “The aims of this project are…”) | 5 |  |
| **Methods** | Summary of standard protocol and equipment used are provided (**Note:** can be brief, as long as appropriate references are provided). Details regarding specific manipulations related to experiments are provided. Description of Measurements taken and analyses made are provided. | 9 |  |
| **Results (text)** | Concise and to the point: key measurements/analyses highlighted though no specific conclusions drawn. Appropriate reference to Tables and Figures. | 10 |  |
| **Figures** | Raw data NOT included unless justification is provided. Figures clearly reveal points of interest. Figures are easy to understand. Figures are appropriately labelled: axes, units and data points. Tables/Figure numbers, title (synopsis), legends are placed appropriately and are sufficient to allow understanding of figure without reference to the text. | 20 |  |
| **Discussion and conclusions** | Results are consistent with aims. Results considered with respect to context (can include technical considerations and future directions). Appropriate conclusions draw regarding figures. Conclusions summarize the major findings of the paper without adding any new points of discussion not addressed earlier. | 11 |  |
| **Referencing** | Referenced appropriate sources. Formatting consistent with guidelines. | 2 |  |
| **Editing: Spelling & Grammar** | Error free in terms of spelling. Gramatically correct, no awkward sentences/phrasing. Abbreviations, if used, appropriately defined on first use. Use the scientific form, passive voice, third person past tense. | 4 |  |
| **Editing: Content and Flow** | Concise and precise writing. Appropriate use of technical terms and content. Consistent layout with appropriate use of subheadings. Figures and tables properly labelled and referenced in text. Logical flow of ideas. | 25 |  |
| **Adhered to page limit** | Yes/No | -5% |  |
| **Late submission (as per UoS policy)** |  |  |  |
|  | **Total** | 100 |  |

# Individual Abstract Marking Sheet

Student: SID:

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Statement** | **Max Mark** | **Mark Awarded** |
| **Title** | Title should be clear and concise. Title should be the same as the group lab report. | 5 |  |
| **Introduction** | Abstract should outline what the general field of the study was and what problem was being addressed. The abstract should state the main objectives of the study. | 5 |  |
| **Methods** | Authors should briefly outline the methods used in the study. The abstract should not include methodological detail but should include what animals and what tissue was used and what was done to produce the results described. | 5 |  |
| **Summary of Main results** | Authors should describe the principal results of the study. The results of any statistical tests performed should also be described here. | 10 |  |
| **Language/Style** | Information should be presented clearly and logically There should be no spelling or grammatical errors. The abstract should be in scientific form (third person past tense, passive voice). The subject-verb-object construction of sentences should agree. Sentences should be complete. Authors should avoid the unnecessary repetition of words or subject matter. Avoid abbreviations in the abstract. Avoid using the possessive form for inanimate subjects. Word count and formatting requirement should be adhered to. | 15 |  |
| **Significance of findings** | Authors should include a summary of their principal findings and state what the importance of these findings are. There should be no references provided for the abstract. | 10 |  |
|  |  |  |  |
|  | **Total** | 50 |  |