

Supplementary material 4. Scoring Rubric for Final Paper Grading

Dr. Joannalyn Delacruz designed the grading Rubric while a graduate student assistant for BioNB/BME/ECE 4910

Midterm and Final Paper Checklist

The point value for each section is indicated in parentheses, and the points you earned listed at the beginning of each section in your lab report.

ABSTRACT (1 paragraph)

- _____ (5) Does the abstract include an introductory statement?
- Does it convey the question being asked and the general methods or approach taken?
- Does it include the major results, the conclusion(s) and general significance of the study?
- Can it stand alone and still be understood?
- Does it conclude with a suggestion of the general importance of the results?

INTRODUCTION

- _____ (10) Do you provide scientific background information for the reader to understand the general importance and significance of the work?
- Does the introduction clearly describe the question being asked?
- Does it include a statement of the hypothesis being tested and predictions based on the hypothesis? (ie., why you did the project and what you hoped to show)
- Is there a brief description of the general design or approach used, the major techniques employed, the principles underlying those techniques, and a very brief summary of the main results?

MATERIALS & METHODS

- _____ (10) Are methods described sufficiently to understand how the data were obtained?
- Is the lab manual cited as appropriate?
- Is all pertinent information included such as saline composition and experimental temperature?

RESULTS

- _____ (25) Do you describe the most important elements of the results in words?
- Do you draw the reader's attention to particularly striking or important outcomes? (ie., do important trends stand out from less important details?)
- Do you make a comparison between experimental samples and controls?
- Do you present the results graphically in a way that is easy to read and comprehend?
- Do curves drawn on graphs show "best-fit" to the data?
- Is it easy to get a sense of how variable the results were?
- Are the figures clearly labeled, including figure legends that provide sufficient information for the reader to understand the data and how they were obtained?
- Are the tables clearly labeled, including table legends that provide sufficient information for the reader to understand the data and how they were obtained?
- Does the text refer to the relevant figures and tables at appropriate times?
- Are the results clearly organized and presented in a logical order? Are data presented only once?

DISCUSSION

_____ (30) Does the discussion link the results with the hypothesis or question addressed by the study?

For the midterm term paper, is your discussion free from the constraints of the lab manual questions? Don't make the mistake of repeating what you wrote in the lab report discussion; you may, however, extend in more detail an earlier discussion of the lab report questions.

Does the discussion contain a conclusion(s) about what the results mean with respect to the question or hypothesis?

Are the conclusion(s) appropriate to the data, neither stronger nor weaker than the data actually warrant?

Do you state your conclusion(s) clearly and succinctly, either as part of the discussion or in a separate, short section?

If your data contain unexpected results, do you attempt to explain them? Do you propose a way to test your explanations?

Do you speculate about the biological basis (general principles or concepts) of your results?

Is the discussion clearly and logically organized?

REFERENCES and CITATIONS

_____ (10) Are references cited appropriately in the text when ideas or facts are not your own? Have you actually looked at the content of the references you cite? Are they in an appropriate format in the reference list (Journal of Neuroscience) and complete?

GENERAL WRITING CONSIDERATIONS

_____ (10) Is the paper carefully edited and proofread?

Are sentences clear?

Are paragraphs unified, coherent and developed?

Are explanations or descriptions concise, avoiding redundancy and wordiness?

Are there transitions between sections?

Does the writing flow, in general? (ie., are points or arguments developed logically?)

_____ (100) **TOTAL**

QUALITY OF PROJECT (bonus points For Final semester project paper)

_____ (5) Sophistication or originality of hypothesis

Sophistication or originality of experimental design

Sophistication or originality of interpretation

Effort put into the project