

Appendix 1: Assessment Rubrics

Rubric for Laboratories: Presentation (15%)

You need to give a 15 minute presentation (including Q&A) at the conclusion of the course.

Marks are awarded based on the following criteria.

1. Concepts, ideas and information presented clearly and appropriately.
2. Able to interpret/explain results.
3. Able to plan/discuss future work and answer questions.

Marking guidelines for each of the 3 presentation criteria are as follows:

0-2 marks, performance is MUCH below expectations

-- most or all key elements lacking

3-4 marks, performance is below expectations

-- major elements lacking, with many points of critique

5-6 Marks, performance meets expectations

-- overall criteria met, but with several minor shortcomings

7-8 Marks, performance exceeds expectations

-- only few, very minor elements lacking

9-10 Marks, performance FAR exceeds expectations

-- only a single, very minor, point of critique (9)

-- no points of critique and essentially no room for improvement (10)

Total marks will be scaled to 15%.

Rubric for Laboratories: Essay (15%)

A Lab Essay is to be written at the conclusion of the course.

- Maximum of four pages of double spaced text
- 4-page limit does not include references/citations for which there is no limit
- Begins with abstract (summary), with a maximum size of 150 words
- Abstract followed by 1 to 3 paragraphs each for Introduction, Methods, Results, Discussion
- Must include References section (unlimited space) after Discussion section

Marks are awarded based on the following criteria.

1. Correct format and general clarity of scientific writing
2. Informative abstract and introduction, descriptive and logical methods and results
3. Meaningful discussion of results and ample and accurate literature citations

Marking guidelines for each of the 3 lab report criteria:

0-2 marks, performance is much below expectations

- most or all key elements lacking

3-4 Marks, performance is below expectations

- major elements lacking, with many points of critique

5-6 Marks, performance meets expectations

- overall criteria met, but with several minor shortcomings

7-8 Marks, performance exceeds expectations

- only few, very minor, elements lacking

9-10 Marks, performance FAR exceeds expectations

- only a single, very minor, point of critique (9)
- no points of critique and essentially no room for improvement (10)

Total marks will be scaled to 15%.

Rubric for Laboratories: Research Competency (40%)

Marks are awarded based on the following criteria.

1. Able to follow instructions
2. Kept designated workspace, common areas and equipment clean and organized
3. Excellent addition to an existing group (able to function well as part of a research team)
4. Dedicated sufficient time to the project
5. Worked to the best of their ability
6. Excellent work attitude
7. Made appropriate preparations prior to starting experiments (planning, reading literature/protocols)
8. Able to work independently

Marking guidelines for each of the 8 research competence criteria:

0-2 Marks, performance is much below expectations

-- most or all key elements lacking

3-4 Marks, performance is below expectations

-- major elements lacking, with many points of critique

5-6 Marks, performance meets expectations

-- overall criteria met, but with several minor shortcomings

7-8 Marks, performance exceeds expectations

-- only few, very minor, elements lacking

9-10 Marks, performance FAR exceeds expectations

-- only a single, very minor, point of critique (9)

-- no points of critique and essentially no room for improvement (10)

Total marks will be scaled to 40%.

Rubric for Laboratories: Log Book (30%)

Marks are awarded based on the following criteria.

1. Correct format is used in all required sections (a. to f. below)
2. Data (figures and tables) are clear and figure legends well described
3. Aims of the experiments are stated clearly
4. Protocols are clearly written
5. Lab log book is clean and neat

Research activities are to be recorded daily (format as follows):

- a. Date and page number.
- b. Brief description of the aim of each experiment (one can refer back to previous experiment with page number on the log book if it is a repeated experiment).
- c. Protocol (one can refer back to previous experiment with page number on the log book if it is a repeated experiment).
- d. Results.
- e. Remarks (including any references or citations).
- f. Student and Supervisor Signature (Weekly).

The marking guidelines for each of the 5 Log Book criteria are as follows:

0-2 marks, performance is MUCH below expectations

-- most or all key elements lacking

3-4 marks, performance is below expectations

-- major elements lacking, with many points of critique

5-6 Marks, performance meets expectations

-- overall criteria met, but with several minor shortcomings

7-8 Marks, performance exceeds expectations

-- only few, very minor, elements lacking

9-10 Marks, performance FAR exceeds expectations

-- only a single, very minor, point of critique (9)

-- no points of critique and essentially no room for improvement (10)

Total marks will be scaled to 30%.