

PHYSL 466: UNDERGRADUATE TUTORIAL

*3 (fi 6) (either term, 3-0-0). Individual study. Restricted to students in the Physiology Honors Program. Students will select a faculty member within the Department of Physiology who will guide them through a course of reading at an advanced level on a specialized topic. Successful completion of an oral presentation is required at the conclusion of the project.

GUIDELINES FOR EVALUATION OF STUDENTS¹:

Supervisors: Students have been emailed a copy of these guidelines as well.

Objectives

The primary objective is to train students to critically read and evaluate original research literature focused on a topic of current relevance in physiology. It should involve a literature search for the writing of a major scholarly review on a subject proposed by the supervisor.

Expectations

Essay Guidelines

Students must submit 3 written essays for evaluation. Each essay should be 10 double-spaced pages (excluding figures and references), and should be written in a format similar to a review article in a scientific journal. The essays should deal with related sub-topics that all have a single unifying theme centered on a major topic in physiology. For example, the 3 essays may deal with, respectively, the roles of Na⁺, K⁺, and Cl⁻ channels in control of cell membrane permeability. The unifying theme in this example would be the cell membrane electrophysiology. Each essay will be marked by the supervisor and an external reader (20%; see below). The 3 essays should be handed in to the supervisor, the external reader and the course coordinator at the rate of one per month during the term. All three essays must be marked before the final oral exam.

Each essay must describe the following aspects of a specific topic:

1. In an introduction section please provide a brief overview of the topic and its significance.
2. In a discussion section, describe the studies that were outstanding in shaping the field. Are there any controversies in the field, and if so, what are they and how did they arise? Who are the leading researchers in the field, and what did they contribute?
3. What key principles or concepts can be derived from the papers covered in the essay?
4. A concluding section must summarize the essay's main points and state clearly student's opinions on the current state of the topic, and future directions. Are there any significant gaps in our knowledge of this research area? If so, what kind of research strategies might be pursued to fill these gaps?
5. The references should be cited in full, i.e. they should include the authors, manuscript title, journal title, year, volume and pages.

Evaluation of Essays

Essays will be evaluated by the supervisor and an external examiner who is an expert in the field of research. The external examiner should be identified by the supervisor and the student at the beginning of term. Each essay will weigh 20% of the final grade and the final oral presentation will weigh 40% of the final grade.

There is much leeway for objectively determining what constitutes "fair" or "excellent" performance in a course. However, some fundamental criteria can be suggested:

- 1) The essays should be clearly written with a logical organization and "flow" of ideas and hypotheses. Figures and diagrams are to be used where appropriate.
- 2) The essays should explicitly state, early on, the major issues or controversies to be discussed, and the perceived importance of these issues to the field of research.

¹ Updated: April 14, 2016

- 3) The essays should show a clear appreciation of the conceptual development and current state of knowledge in a field. The references should be up-to-date.
- 4) The essays must show some attempt by the student to critically evaluate the value and impact of selected papers to the field of research. In other words, why is the paper #1 more significant than the paper #2? It is important that the views expressed here be the student's own opinions, and not those of published articles that are merely paraphrased by the student. If the student chooses to paraphrase published opinions, then it is vital that the student cites the literature source and provides logical reasons for his/her agreement/disagreement with the paraphrased viewpoints.

Any essay that shows evidence of plagiarism on the part of the student will receive a failing mark.

Oral Presentation Guidelines

The student must give an oral presentation to an examining committee at the end of the course. The committee will include the student's supervisor, the external reader who has evaluated the essays, and the course coordinators. The presentation must last no more than 20 minutes, and it will be followed by questioning from the committee members.

The presentation will be scheduled during the last month of the term.

After the presentation the supervisory committee will provide detailed feedback concerning the student's performance at the oral exam.

The **final grade** will be weighed as follows:

3 essays: Marked by the <u>supervisor and the external examiner</u>	60%
Oral presentation.....	40%

Final grades in this course are on a 4-point scale, defined as follows:

Outstanding	94-100%	4.0	A+
Excellent	85-93 %	4.0	A
Very Good	81-84 %	3.7	A-
	77-80 %	3.3	B+
Good	73-76 %	3.0	B
	70-72 %	2.7	B-
	64-69 %	2.3	C+
Satisfactory	61-63 %	2.0	C
	57-60 %	1.7	C-
Minimal Pass	54-57 %	1.0	D
Fail	1-53 %	0.0	F

For more information on the course please contact the Course Coordinators:

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silviap@ualberta.ca

PHYSL 466 Registration

Student Name: _____

ID#: _____

Student Email address: _____

Supervisor: _____

External examiner: _____

Has the student discussed with the supervisor and agreed to the requirements of the course and proposed reading material?

Have regular meetings been scheduled with the supervisor to direct and discuss reading on the specialized topic?

Supervisor's signature _____

Date

External Examiner's signature _____

Date

Student's signature _____

Date