Medical Genetics (MDGEN) 605

Directed Reading in Medical Genetics *3 (fi 6) (either term, 3-0-0)

Reading and study of a specific topic related to the student's MSc or PhD Program in the Department of Medical Genetics under the direction of one or more faculty members.

Prerequisite: Consent of Department (contact the Graduate Coordinator, Dr. Zhixiang Wang).

Guidelines for Evaluation of Students

Instructors

Students have been emailed a copy of these guidelines as well. Instructors of students taking MDGEN 605 are asked to consider the following guidelines for evaluating student performance. Your cooperation will help to establish reasonably uniform standards of evaluation among different instructors. It is also important that students clearly understand what is expected of them in this course, and again, your cooperation in communicating these expectations to them will help to eliminate any discrepancy between the students' perceived expectations and your own.

Objectives

Generally, the primary objective of MDGEN 605 is to train students to critically read and evaluate original research literature focused on a topic of current relevance in Medical Genetics.

Expectations

1. Essay Guidelines

At the end of the course, students must have submitted 2 written essays for evaluation. Each essay should not exceed 10 double-spaced pages (excluding figures and references), and each should be written in a format similar to a short review article in a scientific journal. The 2 essays should deal with related sub-topics that all have a single unifying theme centered on a major topic in medical genetics. Each essay must be marked by the instructor(s). It is suggested that **one of the essays be handed in at the middle of the term and the other before the end of the term to the instructor(s)**. **Both essays must be marked by the instructor before the final oral exam at the end of term**. At the discretion of the instructor, one of these essays may be replaced by a different form of written report (e.g. grant proposal, customized assignment).

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

a) The importance of the topic to the overall development and advancement of the field of research. Provide a brief overview of the topic, as an **introduction** to the main body of the paper.

b) In a **discussion section**, describe the data that were outstanding in shaping the thinking of investigators in the field. Which papers or data were the most significant, and why were they significant? 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 to the field? This section should be central to the essay.

c) What key principles or concepts can be derived from the papers covered in the essay?

d) A **concluding section** must be included, in which the student briefly summarizes the essay's main points and states clearly his/her own opinions on the current state of the topic, and on logical future directions in the field of research under examination. Based on selected readings on this topic, are there any significant gaps in knowledge? If so, what kind of experiments or research strategies might be pursued to fill the gaps in knowledge?

Note: If a graduate student in Medical Genetics has not taken MDGEN 601, then one essay should comprise a research proposal on a topic relevant to the course. This should be 10 pages with a clear hypothesis, rationale, experimental approach and expected outcomes.

2. Evaluation of Essays

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

a) 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.

b) 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. Essays should show a clear awareness of current major issues or controversies in a particular field.

c) The essays should show a clear appreciation of the relevance of selected data to the conceptual development and/or current state of knowledge in a field.

d) The essays must show some attempt by the student to **critically evaluate** the value and impact of selected papers to the field of research being considered. In other words, why is the paper by J. Doe et al. more significant than that by M. Whitewash et al.? 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.

Essays that are superbly written (with no errors in logic and fact), that satisfy all of the above criteria, **AND** that show some **novel and potentially significant insight(s)** should be graded as "**outstanding**" (94-100%). These essays are those that might closely resemble short reviews published in journals such as Human Molecular Genetics.

Essays that are well-written, with few errors in logic and fact, and that satisfy all of the above four criteria while showing no novel and potentially significant insight(s), should be graded as "**excellent**" (85-93%).

Essays that solidly satisfy only criteria 1, 2, and 3 above, without showing evidence of logical critical assessment of the literature (criterion 4), should be graded as "**very good**" (81-84%).

The full grade scale (see page 3) should be used to assign marks below 81% as appropriate.

Any essay that, in the opinion of the instructor(s), shows evidence of plagiarism on the part of the student, should receive a failing mark, and the course coordinator should be notified.

3. Oral Presentation Guidelines

In addition to the written reports, the student must give an oral presentation to an examining committee at the end of the course. The committee will include the instructor and a second faculty member or two instructors, and the Graduate coordinator. The presentation must last no more than **20 minutes**, and it will be followed by questioning from the committee members. **The selection of a second faculty member is the responsibility of the instructor. Prior to the oral presentation, please report the name of the second faculty member to the graduate coordinator**.

Students will be expected to know the general background literature relevant to their particular research topics, and they must be able to discuss the significance of their readings. Students are encouraged to **use diagrams and figures** to clarify complex hypotheses and data. An awareness of the issues and controversies in the field of research being reviewed is required.

After the presentation and at a separate time that is convenient for the student, **the instructor (s) must meet with the student to provide detailed feedback concerning the student's performance at the oral exam**. In particular, the instructor should point out the strengths and weaknesses of the student's oral presentation.

The final grade for the course will be determined from the aggregate marks obtained from the written report, oral presentation, and performance during discussion with the instructor, each weighed as follows:

2 essays: Instructor's marks 50%
Oral presentation 25%
Mark for one-on-one discussions (instructor-assigned): 25%

The mark for one-on-one discussions will be based on the quality of a student's intellectual interactions with the instructor during the course. Factors to consider include: the depth and breadth of the student's discussions and readings, the student's eagerness to explore specific issues at an in-depth level, and the amount of initiative taken by the student.

Final Grades (Graduate Students): On a 4-point scale, defined as follows:

Descriptor	Letter Grade	Grade Point Value	Percentage
Excellent	A+	4.0	94-100%
	A	4.0	85-93%
	A-	3.7	81-84%
Good	B+	3.3	77-80%
	B	3.0	73-76%
Satisfactory	B-	2.7	70-72%
	C+	2.3	64-69%
Failure	C	2.0	61-63%
	C-	1.7	57-60%
	D	1.0	54-57%
	F	0.0	1-53%

Link to Grading System: https://www.ualberta.ca/en/registrar/examinations/assessment-and-grading/grading-system-explained.html