

IMM450Y - Research Project in Immunology

IMM450Y is a full credit course in which the student takes part in an original research project in the laboratory of a faculty member associated with the Immunology Specialist program. The program is designed to provide an opportunity for the student : (1) to discover if he/she has an interest in and a capability for a career in research; (2) to discover in detail, through active participation, the research projects being undertaken in a specific laboratory. Moreover, it allows for faculty appraisal of the potential of the student for graduate research education.

The student is expected to devote a minimum of seven hours per week (normally one full day or two half days) to the course from the week the fall term lectures begin to the last week of the spring term in which lectures are given. This time is to be spent in the laboratory carrying out experiments. Data evaluation, literature reading, report and oral presentation preparation are to be done outside of the laboratory time. The time available should be sufficient for the student to complete a project and to become familiar with a number of techniques used in cellular or molecular biology.

Grade Breakdown

Lab work/participation	-70%
Final Report	-20%
Final Presentation/Participation	-10%

Written report (20 marks): The main objective of this report is to give students an opportunity to learn how to write a manuscript. The students are encouraged to seek help from their supervisors to write (and re-write) the report before submission to the course coordinator. The focus is on the learning process, not necessarily on how much result that you have generated. Thus, it is recommended that the students start drafting the reports a month ahead of the deadline. Additional results acquired after finishing the report may be presented in the oral presentations.

Due: Wednesday April 5th, 2017 at 3:00 p.m. A hard copy of the report should be delivered to the Immunology office at MSB 7205. Reports received after this deadline will be penalized - 4 marks (20%) will be deducted per day.

Format: Typed, 12 point font, double-spaced; should not exceed 8 pages (excluding references, tables and figures). Reports that do not conform to this format will be penalized (2 marks will be deducted). 'Mini-manuscript': Check papers in the Journal of Immunology as examples.

Abstract: Not more than 200 words. A summary of your objective and key accomplishment

Introduction: Background of your project and the objective(s). Any hypothesis?

Methods: Use sub-headings to describe the different techniques used in your project.

Results: Use sub-headings to describe your findings. If possible, organize your data in Tables, and show your results in good quality figures. Assemble all the figures at the end of the report. All

Figures must be accompanied by clear and concise legends.

Discussions: Organize them in the points that you would like to make (use sub-headings):

1. The interpretation of your results;
2. How your results might have advanced the current knowledge in your area of interest;
3. Can you build a model based on the results that you've got?

Presentations: Friday, April 7th, 2017 in MSB 3278. The presentations will start at 10AM and are expected to end sometime in the afternoon. If and only if you have a class scheduled for this day, we will organize an alternate time/day for your presentation. Failure to show up will result in 0 marks for oral presentations.

Presentation (8 marks): evaluation will be based on organization and clarity of the talk; and the ability to handle questions. 8 minute presentation; 5 minutes for questions.

All students **MUST** attend **ALL** the presentations.

Participation during the question period (2 marks): Up to 2 marks will be awarded for the level of participation (i.e. asking questions) during the student presentations. No marks will be given to students who did not ask any questions.

Important notice: The research being conducted by you, the undergraduate student, is part of an overall research program of the principal investigator and undergraduate projects are frequently connected with data produced by other lab members and collaborators. Hence, results and methodologies of your research project is the property of the principal investigator. If you wish to present your work in any manner to the general public or to your peers (e.g. at meetings, posting it on the internet), you must first get permission from the principal investigator to do so.

If there are any questions, please email Dr. Alberto Martin (alberto.martin@utoronto.ca).