

Advanced Research Project in Molecular Genetics

MGY480Y

Course Coordinator Dr. Marc Meneghini

MGY480Y is an independent research course in which students pursue a project under the supervision of a faculty member in Molecular Genetics. This is a year-long course that begins in the Fall term and ends in the Spring. *To enroll in MGY480, students must first identify a faculty member willing to supervise them.* A list of our faculty and their research interests can be found [here](#). Once a supervising faculty member has been identified, you may enroll in MGY480. However, the course coordinator must receive confirmation from the professor that s/he is willing to supervise the student for the course. *Due to the COVID-19 pandemic, for the upcoming 2020-2021 academic year, only students who secure a “dry-lab” computational project that can be pursued remotely (without requiring access to the laboratory space) will be permitted to enroll in MGY480Y. For other options, please see MGY481H.*

Prerequisites:

1. MGY311Y1/BCH311H1/CSB349H1 and a 3rd year MGY or BCH lab course or other relevant lab experience.
2. Students require a minimum B/B+ average (CGPA ~ 3.0 after 3rd year) to participate in the course.
3. As long as they have a supervisor willing to mentor them, students who are not MGY majors/specialists are welcome to take MGY480, but will need to contact the coordinator directly in order to enrol in the course.

Student Evaluation:

20%: Midterm report (marked by the supervisor with input from the course coordinator).

60%: Thesis (35%) and Oral defense (25%) (marked by the supervisor and at least 2 other faculty members who make up the examination committee). The examination committee will assess the students written thesis, their oral presentation, and their handling of questions during the oral examination. Each student's oral defense will occur sometime during the final examination period, between April 8th and April 30th. Efforts will be made to ensure that oral examinations occur on days that minimize conflicts with other exams. The examination committee will be comprised of the student's supervisor and at least two additional faculty members. Students will be permitted 10 minutes to present their work, followed by 10-15 minutes of questions from the examination committee. It is strongly recommended that students go over their presentations with their supervisor.

20%: Lab performance (this mark comes from the supervisor and is based on his/her assessment of the students performance in the lab over the course of the year).

- **Important Dates:**

Proposal Deadline: 5pm, Friday, September 25th, 2020

A PDF file should be emailed to the coordinator by the above deadline. This is not marked, but is still required.

Midterm Deadline: 5pm, Friday January 8th, 2021

A PDF file should be emailed to the coordinator and the supervisor by the above deadline.

There will be a 10% penalty assessed for each 24-hour period in which the midterm submission is delinquent.

Thesis Deadline: 5pm April 2nd, 2021

A PDF file should be emailed to the coordinator, the supervisor, and the examination committee members by the above deadline.

There will be a 10% penalty assessed for each 24-hour period in which the proposal submission is delinquent.

Oral Exams: Thesis defense examinations will be scheduled between April 7th and April 30th, 2021.

- **Proposal Guidelines:**

The proposal should be 1 single-spaced page (not including references) with 12-point font and .75-inch margins. It should contain a brief yet descriptive title and outline the project in broad terms such that the coordinator has a good sense of what the students project will entail. Include a brief introduction that should not exceed 1/4 a page, followed by a description of the approaches/methodologies and anticipated outcomes. Strive for clarity and conciseness for the proposal.

- **Midterm Guidelines:**

The Midterm is a progress report of the work you have done and should contain a discussion/outline of the work you intend to do for the remainder of the course. It should be a maximum of 5 pages. The format is 12-point font, 1.5x spaced, and .75-inch margins.

Please note that oftentimes research trajectories will change. You may find that your midterm report has little/nothing to do with your original proposal you submitted at the start of the course. This is perfectly normal and should not be a source of distress. You should be working on your

project(s) throughout the Fall with the hope of having a better idea of where things are going by the end of the term. The midterm report should thus be a summary of what you've done so far, and where your project is heading.

Your supervisor will mark the midterm with input from myself. You should discuss with your supervisor if they want an electronic or a hard copy. Submit an electronic copy to myself before the deadline.

Midterm Report organization:

Introduction: A brief summary of the field.

Hypothesis & Experimental Outline: A straightforward explanation of the question, model or hypothesis that is the basis of your work. This should be followed by a description of the approaches you have taken towards this model/hypothesis/question.

Summary of work: Summarize in a logical order the results of the experiments you have carried out and the conclusions you draw from those results.

Future work: Outline of your experimental plan for the remainder of the course.

Figures: Include a maximum of 4 figures, appended to the end of the report (and not part of the 5 page maximum page limit for the midterm report).

References: These are not included in the page limit.

- **Thesis Guidelines**

I have streamlined the guidance for the final report. Please format your final report in the style of a research article in the journal *Cell*. I summarize below but see here for more details as needed: <https://www.cell.com/cell/authors>

Use 1.5x spacing and 12-point font throughout (except for figure/table legends, which use single spacing).

Title: 12-15 words

Authors: list all contributors. Although it is expected that the bulk of the reported work is your own, it is understandable that some reporting of other results may be important. Use the author list to include other such contributors, and be sure to specify them in the text.

Summary: A single paragraph of no more than 150 words summarizing your work.

Introduction/Results/Discussion: Break up the body of your thesis into these three sections. Use a maximum of 50000 characters.

Figures and Tables: Figures and tables, with their legends, may be embedded in the body of the thesis or included at the end at your discretion. Figure legends do not count towards the character limit.

Methods: Sufficient detail needed for an independent researcher to replicate your findings is essential. Break this up into subsections as required.

References: Use the *Cell* referencing style.