

BIOC99H: Team Research in Biological Sciences

2014 / 2015 Academic year

Course Syllabus

Course coordinator: Prof. Andrade

E-mail: mandrade@utsc.utoronto.ca

Office: SW 551

Class Meetings:

Fall 2014: Wednesdays, 14:00 - 16:00, IC328

Winter 2015: Mondays, 15:00 - 17:00, IC328

Summer 2015: Tuesdays 10am - noon, SW319

This class will **NOT** meet every week. Time and location may change to accommodate research schedules, this will be discussed in class

Other important support people: i) your faculty supervisor
ii) your group TA

WHAT IS BIOC99?

This course provides an introduction to academic research and collaboration. A group of 3-5 students work together to develop a research proposal and/or implement a research project under the general guidance of a faculty researcher and the direct supervision of a teaching assistant. In addition to learning about the process of scientific investigation, students learn to work as part of a team, and about the stages in research design, implementation and communication.

REQUIRED PREPATORY TRAINING

Students working in a lab or doing field research must complete WHMIS & Lab Safety Training. Students must contact Human Resources for this training (416-287-7073). Students working with animals must undergo animal care training. Students working with biohazards must undergo biosafety training. All students should consult with their TA and supervisor regarding the training that is required.

COURSE OVERVIEW

This course typically combines a few sessions of in-class discussion and presentations with intensive time in the laboratory. Classes are taught by Prof. Andrade and research time is facilitated and directed by your group TA, in consultation with your faculty supervisor.

Questions regarding research challenges/issues are best directed to your TA and faculty supervisor. Questions regarding collaboration, scientific communication, accessing library resources etc. are best directed to Prof. Andrade.

OBJECTIVES:

By the end of the term students should be able to:

- 1) Efficiently search for and critically read the primary literature.
- 2) Evaluate data and assess the validity of inferences based on these data.

- 3) Synthesize information from a variety of sources to support an argument.
- 4) Explain and discuss the relative merits of conflicting hypotheses in their field.
- 5) Propose new investigations that could extend knowledge in their field.
- 6) Develop proficiency in oral and written scientific communication
- 7) Understand their own strengths and weaknesses when doing team work.

Your research supervisor may have other learning goals that centre around the theory and methodologies specific to their discipline.

COURSE STRUCTURE

- Each team will meet weekly with their Teaching Assistant, and periodically (typically 1x per month) with the faculty supervisor on a schedule worked out at the beginning of the term.
- All teams will participate in 2-3 class meetings with the course coordinator in a time set by the course-coordinator at the beginning of the term.
- Online tools for communication within and between groups, and between the course coordinator and student groups will be enabled on a Blackboard homepage. Library resources will also be provided. Access the Blackboard page with your UtorID via the portal (<https://portal.utoronto.ca/>).

MARKING SCHEME

- 15% Participation in meetings with course coordinator.
Two oral presentations: Research proposal talk; Research update talk
Three written documents: Research Work Plan, Writing & completion plan, Draft research paper
- 85% Determined by your faculty supervisor as outlined on the 'Permission for BIOC99 Team research' form. This will typically involve some portion of your mark for laboratory work and collaboration and the bulk of your mark for a written paper and a final oral presentation.

Class Schedule (Tentative)

Fall 2014	Winter 2015	Summer 2015	Meeting purpose
Week of Sept 3	Week of Jan 5	Week of May 4	*Meet with TA & research supervisor
Wed. 10 Sept	Mon. 12 Jan	Tues May 12	<ul style="list-style-type: none"> • Discuss course organization & effective groups (see reading online) • Informal verbal report on meeting with supervisor/TA
--	--	Week of May 19 or 26	<ul style="list-style-type: none"> • Meet with subject librarian
Wed. Sept 17	Mon. Jan 19	Tuesday June 2	Informal talk: Research proposal, work plan & progress (~15-20 min) Hand in: Research Work Plan
Week of 13 Oct	Week of Feb 16	Week of June 16	Reading week
Wed. 22 Oct	Mon. Feb 23	Tues July 7	Informal talk: Research update (~10 - 15 min) Hand in: Writing & completion plan
--	--	Tues July 21	Hand in: draft research paper for comments
Mon. Dec 1	Mon. April 6	Tues Aug 4	Research paper due (to faculty supervisor, copy to course coordinator)
Dec	April	As scheduled by TA	Formal Research talk (~20 - 45 min)