BIOC99H: Team Research in Biological Sciences  
Fall 2016 & Winter 2017  
Course Syllabus

Course coordinator: Prof. Andrade  
E-mail: mandrade@utsc.utoronto.ca  
Office: SW 551

Class Meetings:  
Fall 2016: Wednesday, 14:00-16:00, AA207  
Winter 2017: Monday, 15:00 - 17:00, SW143

This class will NOT meet every week (see schedule below)

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 Environmental Health & Safety for this training (416-208-5124). 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 or the literature. 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 on 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
Two written summaries: Research Work Plan, Writing & completion plan

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 research and meetings with your TA and the bulk of your mark for a written paper or poster and a final oral presentation.

### Class Schedule (Tentative)

<table>
<thead>
<tr>
<th>Week</th>
<th>Fall 2016</th>
<th>Winter 2017</th>
<th>Meeting purpose</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 6 - 9</td>
<td>January 2-6</td>
<td><strong>Meet with TA &amp; research supervisor</strong></td>
<td>Arrange a meeting time/date with supervisor and TA which all group members can attend</td>
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<tr>
<td>2</td>
<td>Sept 14</td>
<td>January 9</td>
<td>Discuss course organization &amp; tips for effective collaboration (see reading on blackboard) Informal verbal report on meeting with supervisor/TA</td>
<td>READ these TWO items before class (see Blackboard): • ‘Building a successful team’ • Varvel et al 2014. Team effectiveness &amp; Individual Myers-Briggs Personality dimensions DOI: 10.1061/(asce)0742-597x(2004)20:4(141)</td>
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<tr>
<td>3</td>
<td>Sept 21</td>
<td>Jan 16</td>
<td>How to deal with References... Meet with subject librarian (Sarah Guay, <a href="mailto:sarah.guay@utoronto.ca">sarah.guay@utoronto.ca</a>)</td>
<td>Register for a Zotero account (see: <a href="http://www.zotero.org">www.zotero.org</a> or the library course guide linked to the homepage)</td>
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<tr>
<td>6</td>
<td>Oct 5</td>
<td>Feb 6</td>
<td>Informal talk: Research proposal, work plan &amp; progress (~15-30 min) Hand in: Research Work Plan</td>
<td>Prepare work plan with major tasks/goals outlined along with timeline and task assignment</td>
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<tr>
<td>10</td>
<td>Nov 9</td>
<td>March 6</td>
<td>Informal talk: Research update (~10 - 15 min) Hand in: Writing &amp; completion plan</td>
<td>Prepare writing and completion plan with tasks outlined and task assignment</td>
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<td>12</td>
<td>Dec 1</td>
<td>March 31</td>
<td>Research paper due (to faculty supervisor, TA, digital copy to course coordinator)</td>
<td>Collaborative writing, review &amp; revision</td>
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<tr>
<td>13</td>
<td>Dec 2 (time TBA)</td>
<td>April 1-4 (date TBA)</td>
<td>Formal Research talk (~20 - 45 min)</td>
<td>Your supervisor &amp; TA will also attend this session.</td>
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