

This syllabus is a general representation of the course as previously offered and is subject to change.

BIOL 347 – Principles and Methodology in Biological Research

General Course Syllabus (as of August 2019)

About the Course:

Course Description: A course on contemporary research in the Botany and Zoology Departments; history and methodology of scientific discovery; and seminars on current problems. Restricted to Honours students in Biology. Not to be taken concurrently with BIOL 449.

The goal of this class is to introduce students to the process of conducting scientific research. Through reading and discussing scientific papers and meeting with the authors of these papers, students will acquire skills that will help them to successfully complete an undergraduate honours thesis research project in their fourth year. This class involves substantial active engagement and reading the scientific literature and several short writing assignments.

Course Format: Seminar: class meets weekly for a 3-hour seminar.

Credits: 3

Pre-requisites: This course is restricted to students in the BSc Honours in Biology program.

Course Learning Objectives:

By the end of the course, students will be able to:

- Clearly articulate their research interests and goals.
- Improve their ability to critically analyze scientific papers, even in unfamiliar areas.
- Identify a supervisor for their 4th year honours research.
- Start developing ideas for their 4th year honours project.

Textbooks and Additional Resources:

Access to course website on Canvas (canvas.ubc.ca) will be required for students to obtain course materials and weekly paper readings.

Grading Scheme:

Assessment	Weight
Weekly analysis of papers	50% (5% each week)
Class participation	14%
Written statement of interests	10%
List of potential honours supervisors	5%
Annotated bibliography	20%
Finalized choice of supervisor	1%

DESCRIPTION OF ASSESSMENTS:

Weekly analysis of papers (50% of grade, 5% each week that a paper is discussed)

In class each week (starting in week 2) students will learn to critically analyze and discuss a scientific paper written by a UBC faculty member. Students will be assigned the paper in advance and will be expected to read and analyze the paper prior to class, and upload a short document summarizing their thoughts about the paper onto Canvas. Half of the marks (2.5% of course grade each week) will be based on this submitted document. These marks are largely assigned based on participation and evidence of a sincere attempt to read and understand the paper, rather than being assessed for correctness. The other half of the mark (2.5% of course grade each week) will be based on in-class discussion. Students will be broken into groups and each group will be randomly assigned to lead the discussion of a section of the paper (introduction, materials and methods, results, or discussion). Students will be assessed on how well they are able to lead the assigned discussion, and how well they participate in the discussion of the other parts of the paper.

Written statement of interests (10% of grade)

This will be a roughly 1 page double-spaced reflective document that will help students to define goals for their honours thesis research. The document should address the following questions: 1) What are your scientific interests? 2) What is your previous research experience (if any)? 3) What are your long-term goals (e.g. career goals, life goals)? 4) What are you expecting to get out of your Honours Program experience?

List of potential honours supervisors (5% of grade)

To help students begin the process of identifying a potential supervisor for their honours research, students will develop a list of at least three (and up to five) professors who might be good choices as potential supervisors, and a short statement explaining why the students chose them. If students already have a supervisor chosen, they should still include the additional names and explain how their research interests fit with these individuals.

Annotated bibliography (20% of grade)

Students will develop a list of ~10 papers *relevant to their potential honours research*, with full citations, and 2-3 sentences for each paper giving the key result(s) and/or take home message (in the student's own words, **NOT** copied from the abstract or other text). Students can use this bibliography to help them prepare for meetings with potential supervisors or to start developing research ideas for their 4th year thesis.

Finalized choice of supervisor (1% of grade)

By the end of the course, most students will have chosen a supervisor and will provide the name of a professor who has agreed to accept the student for an honours project.

Class participation (14% of grade)

Each week after the class discussion of the paper, a faculty member who is an author on the paper will come to the class and give a presentation about their research program.

Students will be expected to engage with this faculty member and ask them questions about their research. The grade on this aspect of the course will be based on the students' interactions with this faculty member, and their participation in all of the various aspects of the course.

Schedule of Topics:

Week	Activities	Items due
1	Introduction to the course	
2-12	Paper discussion and faculty presentations. Past examples of faculty speakers: <ul style="list-style-type: none"> • Trish Schulte • Chris Wood • Rick Taylor • Bill Milsom • Rachel Germain • Katie Marshall • Phil Matthews • Laura Parfrey • Kenji Sugioka 	Weekly: Paper template Week 3: Written statement of interests Week 5: List of potential supervisors Week 9: Annotated bibliography
13	Mock thesis defense by 4 th year students	

University Policies:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.

UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.

UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).