



THOMPSON RIVERS UNIVERSITY

Department of Biological Sciences

BIOL/CHBI 3980 - 1
Introduction to Research (0,1,0)
Winter 2025

Instructor: Dr. Naowarat Cheeptham (Ann) **Office hours:** By appointment
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Meeting times

Lectures: Monday 12:30 to 1:20 PM, Room OM2216
Environmental Sciences Seminar Series: Thursday 4 – 5 PM, Room S203
<https://www.tru.ca/science/news/mscseminar.html>

Calendar Description

This course is available to 3rd-year students contemplating entry into the Honours program or undertaking a Directed Studies research project in their 4th year. The seminar will focus on the formulation of a research hypothesis and the production of a research proposal in preparation for application to do an Honours or Directed Study research project. Honours students are required to take this course.

Course description

The goals of the Introduction to Research seminar are two-fold:

- to allow students to explore and discuss general topics relevant to scientists, with a focus on scientific investigation, and to help formulate and test a hypothesis and statistical methods. This will be accomplished through readings, group discussions, and presentations by current Honours students and interested faculty. Researchers from outside the TRU Community may also be brought in to lead discussions and share their knowledge.
- to prepare students to produce a research proposal outlining the background and experimental strategies for a research project to be carried out in 4th year, and to familiarize students with the requirements for Directed Studies and Honours projects (posters, thesis, oral defense).

Educational Objectives/Outcomes

Upon successful completion of this course, students will be able to:

- discuss the scientific method of study, including the formulation and testing of research hypotheses;

- describe the responsibilities of the student and of the supervisor in the context of an Honours or Directed Studies project;
- prepare a detailed research proposal outlining the background, methods and budget for a project to be undertaken in 4th year.

Prerequisites / Corequisites

3rd year standing in a B.Sc. or BNRS Program

Text / Materials

No text is required. Readings will be assigned by the instructors.

Student evaluation

Completion of this course is a requirement for the Honours programs in Biology and Chemical Biology. It is not required as a pre-requisite Directed Studies course, but students undertaking Directed Study projects will benefit from the course. Students receive either COMPLETE (COM) or No Credit Granted (NCG). To receive COMPLETE standing, the student must participate in all activities and complete all assignments, including a research proposal to be submitted with the student's application for entry into the Honours/Directed Studies program. Credit for this course may also be obtained under the terms of "Prior Learning Assessment and Recognition" by working with an individual faculty member to prepare a research proposal.

Course Topics

The general list of topics and activities in this course include:

- Doing an Honours or Directed Study project as a capstone to your degree: purpose, expectations, requirements, and benefits
- The principles of scientific inquiry
- Basic experimental design
- Defining and writing research objectives
- Elements of excellent scientific writing and scientific presentations (oral and poster format)
- Preparation of, and critiquing, research proposals and funding applications
- Seminar presentations and discussions centered on research projects being undertaken by 4th year students, invited faculty and guest speakers

Special Course Activities

Students will be expected to attend seminars by invited speakers in the Science Seminar Series at 1 PM on Thursdays, and in the Environmental Sciences Seminar Series at 4 PM on Thursdays. In addition, students may be requested to attend activities or events outside of normal class time, e.g Honours students' defenses, Science Poster Day, and other presentations of interest.

Prior Learning Assessment and Recognition

The learning objectives of this course may be completed under the individual supervision of a faculty member from Biology, Chemistry or NRS and approved by the Honours Committee for each program.

Course schedule

Activities and topics that will be covered during the semester.

Week	Activity
1	Research opportunities at the undergrad level. What is “scientific research”? Formulating a researchable question.
2	Communicating science to scientists: what constitutes an excellent science presentation? Elements of grant proposal writing: how to prepare an excellent grant application.
3	Honours & Directed Study: program overviews, application process.
4	Grant proposal writing - review of draft proposals.
5	Grant proposal evaluation panel: peer-evaluation of student proposals.
6	The student-supervisor relationship: responsibilities and expectations of student and supervisor.
<i>Mid-semester break</i>	
7	Honours & Directed Study proposal writing: format, content, and review process.
8	What constitutes an excellent Honours & Directed Study proposal?
9	Why get involved in undergraduate research? Discussion panel with faculty, graduate students, and industry scientists.
10	Honours & Directed Study proposal writing - update.
11	Workshop on the use of referencing software - RefWorks.
12	Honours & Directed Study proposal writing - update.
13	Honours & Directed Study proposal writing - peer review session.
14	<i>Final exam period</i>
15	<i>Honours defences take place during exam period - everyone welcome.</i>