

Course Outline

Faculty of Science
Department of Biological Sciences

BIOL 448-3 (0,0,3)
Directed Studies in Biology
(UPDATED JAN. 2006)

Instructors: Individual supervision by faculty in the Department of Biological Sciences.

Calendar Description:

A course designed to allow students to undertake an investigation on a specific topic as agreed upon by the faculty member and the student. Permission of the supervisor and co-supervisor required.

Course Description:

Directed studies provides the student with experience in either carrying out an original laboratory or field-based research project in biology or in thoroughly researching a particular topic and synthesizing all of the available information into a review article. The course will help to develop the discipline, independence, and specific lab, field, and/or library skills needed to carry out investigations into biological research questions. The student will also gain experience in writing a formal scientific report and in presenting their work in public. Specific results of the study are not as important as the student's initiative, effort, and creativity in carrying out the project and the quality of written report and poster presentation.

Prerequisites:

- (i) Completion of an appropriate Third Year course (usually a course taught by the faculty supervisor) with a grade of B or better.
- (ii) Approval of TRU Biology faculty supervisor and co-supervisor as indicated on the Application Form for Directed Studies and Honours Program in Biology. The co-supervisor may be a TRU faculty member from a relevant field, or may be someone from off campus with the appropriate expertise
- (iii) Approval of a research proposal submitted, normally by April 15th, to the Biology Departmental Honours/Directed Studies Committee.

Corequisites: as discussed with supervisor

Required Texts/Materials:

None. Faculty may provide background material and students will be expected to obtain further background information through the library.

Application procedures and syllabus:

Third year students who expect to meet the prerequisites for Biology 448 and are interested in participating in the course must meet with potential supervisors to discuss their interest in the topics available in the following academic year.

When the student, supervisor and co-supervisor have agreed on a project, they complete the appropriate portions of the Application Form (attached), which is then submitted to the B.Sc. Advisor, normally by April 15. A departmental committee will review applications by May 1.

The student and supervisor will collaborate on the writing of a research proposal that briefly outlines the background, significance and objectives of the proposed project and includes a list of material, equipment, space and supplies needed as well as a budget. The project may take the form of an original research project to be carried out in the field or the laboratory, or a library based investigation. Costs of up to \$150 for supplies may be covered by the Department. Additional costs would normally be covered by grants of the supervisor and/or student.

The proposal is to be reviewed and approved by the co-supervisor and submitted to the B.Sc. Advisor by April 15 for projects beginning in the summer or the following September. Final approval of the project is normally made by the departmental committee by May 1. Students who miss the deadline or decide on a project at a later date may still apply at any time; the committee can meet again (usually in the Fall) to determine if there is space and/or resources to accommodate them.

The student and supervisor will meet regularly to plan and carry out the project. The co-supervisor may be consulted as needed and should be kept informed of the progress of the project. Normally projects will be one semester in length but may be carried over. The poster will normally be presented in late March or early April.

Evaluation:

For laboratory/field research-based projects:

(i) **Research proposal** outlining the background, significance and objectives of the proposed project, with budget. **(10%)**

(ii) A **written report** will be provided by the student to the supervisor and co-supervisor at least three weeks before the end of the Winter semester. Reasonable production costs of the report will be absorbed by the department. The supervisor will establish the style of the report at previous meetings with the student. **(40%)**

(iii) A **public presentation** of the student's work. This presentation will normally take the form of a poster to be presented at the annual Science Poster Day in March/April. As an alternative, the supervisor may arrange for the student to give a short public seminar. The co-supervisor and a department designate will grade the public presentation. Costs of poster production will be covered by the department. **(20%)**

(iv) An **evaluation** by the supervisor of the student's laboratory and/or field and/or library skills developed during the acquisition of the experimental data or relevant literature. This evaluation will include an assessment of the student's ability to work and think independently, industry, and creativity, as well as their mastery of the particular techniques used in the project. **(30%)**

For a library-based project, evaluation will be based on:

(i)	Written Report	65%
(ii)	Public Presentation	20%
(iii)	Library Research Skills	15%

Suggested Timelines:

The following schedule applies to both Directed Studies and Honours applications.

Date:	Action	Responsibility
Nov 15	Presentation to students on Research opportunities	Department, initiated by chair
Jan- March	Biology 398 Students confer with prospective supervisors.	Instructors Student
April 15 (normally)	Student to submit application and a preliminary proposal (see attached guidelines) for Honours/Directed Studies to B.Sc. advisor.	Student Note: students may apply at any time but projects must be approved by the Department.
by May 1 (normally)	Committee (including lab faculty) meets to review applications and decide on preliminary acceptance	Department
May 15- June 1 (normally)	Final research proposal submitted to Department Chair, with list of materials, equipment, space supplies needed, and a budget	Student takes primary responsibility for a 2 page proposal (this will be marked). Supervisor takes initiative on generating realistic budget and other requirements. Supplies/space/resources requirements to be reviewed by the supervisor with the appropriate lab faculty.
Summer, Fall or Winter Semester	Research Projects undertaken	Student, with supervision
End of March	Poster Presentation	Student
End of Dec (Fall) or April (Winter)	Final write-up of project due	Student