This course is intended to provide an Honours Ecology student with a two-term research-project experience, with a mechanism to carry out advanced work in areas not covered in regular courses or to pursue topics in more depth, and to expose them to the type of life led by graduate students and research scientists. Because such exposure is so important to the development of potential researchers, efforts will be made, whenever possible, to provide independent study students with research and desk space in the laboratory of their supervisor, so that they can interact with an active research group on a day-to-day basis.

Ecology 530 will be conducted within the jurisdiction of the Program of Ecology. If the Supervisor is not a member of the Biological Sciences Department, a Program faculty member must act as Co-supervisor; in this case, both signatures will be required before approval for registration will be granted. Both the supervisor and co-supervisor must be kept apprised of the project during the term and must approve the proposal. Both the supervisor and co-supervisor will also be involved in evaluation of the project and determination of the final grade. Projects undertaken outside the Ecology program must have a component that aligns with the Ecology program.

GUIDELINES PERTAINING TO REGISTRATION IN ECOLOGY 530

1. Bring a printed copy of all pages of this form with you when meeting with a potential supervisor and Co-Supervisor, if necessary. You MUST also bring an unofficial, current copy of your transcripts when meeting with potential supervisor(s). The second and third pages of this form must be completed and signed by the Supervisor, Co-Supervisor if necessary, and the Course Coordinator. Forms that do not indicate an agreed-upon value and due date for all course components will not be approved by the department. The last page of this form must be completed and signed by the student and submitted to the Supervisor with the final report for the project.

2. Return form to BI 186 for approval and registration NO LATER than 10 working days before the last date to change registration for the term, as indicated in the University Calendar. If approval is denied, you will be notified by e-mail. After the course is entered into the system, you will be able to register for the course online. You are not registered until the online registration has been completed.

3. If you are not accepted into the Honours program, you can register for a 528 by completing the appropriate form.

4. Failure to complete the form correctly will delay your registration in this course.

5. If this is a sixth course, you must obtain consent of the Faculty - please obtain the appropriate form (Change of Registration) from the Registrar’s website. (www.ucalgary.ca/registrar/forms_students)

6. Students must have completed the BioSci core with a current GPA of 2.75 or higher.

7. Departmental approval will not be given to a 528 or 530 project course being carried out in the same lab/with the same supervisor as previous or simultaneous 528/530 project courses, unless there are extraordinary circumstances.

GUIDELINES PERTAINING TO THE CONDUCT OF ECOLOGY 530

1. Upon discussing the project with a potential supervisor, the student will normally be required to prepare a preliminary research proposal outlining the objectives of the project and the methodology to be followed. Potential supervisors may withhold their signature until such a proposal has been prepared and accepted.

2. Because of the time required to consult with potential supervisors and to prepare the proposal, students will normally initiate this process well in advance of the beginning term of the Ecology 530 course and would normally present their proposal late in the preceding winter term (i.e., March or April). In the case of a co-supervised project, the Program supervisor, the Out-of-Department supervisor and the student will meet to approve the proposed project.

3. Since Ecology 530 is meant to provide an opportunity for independent research, the role of the faculty member will be biased much more to supervision than to formal instruction. The onus is on the student to show initiative and an ability to work in an independent manner. However, it is the responsibility of the supervisor(s) to keep informed of the progress of the research program and to anticipate possible problems. This would normally require regular meetings of the student and supervisor(s) to review the progress of the research.

5. A final written report, in the form of a research paper or mini-thesis, is due on the last day of classes. This report will be read and assessed by the supervisor(s) and at least one other faculty member (not necessarily a member of the Program of Ecology). It is strongly advised that a draft of the report be submitted to the supervisor(s) at least 2 weeks before the end of classes so that some feedback on style can be conveyed to the student. After assessment of the final written report, the final grade will be submitted to the Department of Biological Sciences by the Program Supervisor.

6. Students are also required to attend the Program Seminar and will normally present a report on their project in that seminar at the end of the final term of the course.
ECOLOGY 530 - Honours Research Project

This is to confirm that I/we am/are willing to supervise

________________________, I.D. __________________________

in ECOLOGY 530 for the following terms/academic year ____________

The title for the course will be HONOURS RESEARCH PROJECT

and it will count towards a major in ECOLOGY.

To be eligible to enrol in Ecology 530 a student must be in the Honours Ecology programme, have completed 90 units in their degree programme and have obtained a GPA of 3.0 or higher in Department of Biological Sciences courses at the 300-level or higher. Enrolment in this course carries the same credit as enrolment in a regular course with 3 lectures and a tutorial or laboratory (i.e., 4-6 hours of class time per week). With outside reading and review, this course should require at least 8 hours per week on the student's part. Honours students should approach a faculty member with whom they wish to work and discuss their possible project. Students who have a project in mind but are unsure which faculty members would be potential supervisors should approach the Program Chairperson or the Biological Sciences Office for advice; this should be done well in advance of the commencement of classes (see first page).

The following component values have been agreed upon by the student and supervisor(s):

<table>
<thead>
<tr>
<th>Course component</th>
<th>Due date (if applicable)</th>
<th>Suggested value range (%)</th>
<th>Agreed value in % (Total = 100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
<td>Within first month</td>
<td>10-25</td>
<td></td>
</tr>
<tr>
<td>Progress Report</td>
<td>Halfway through course</td>
<td>0-20</td>
<td></td>
</tr>
<tr>
<td>Research component (in 3 subcomponents, if desired)</td>
<td>N/A</td>
<td>20-45</td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Report</td>
<td>Last day of classes</td>
<td>25-45</td>
<td></td>
</tr>
<tr>
<td>Oral presentation</td>
<td>Last or second-last week of classes</td>
<td>10-20</td>
<td></td>
</tr>
</tbody>
</table>

**Letter Grade Conversion**

A+ ≥ 92, A ≥ 85, A- ≥ 80, B+ ≥ 77, B ≥ 73, B- ≥ 70, C+ ≥ 67, C ≥ 64, C- ≥ 60, D+ ≥ 55, D ≥ 50, F < 50

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Student name (please print) __________________________ Phone __________________________

e-mail address __________________________

Address ______________________________________

Student signature __________________________ Date __________________________

Program Supervisor signature __________________________ (please print name as well) Date __________________________

Out-of-Department Supervisor signature (if relevant) __________________________
(please print name as well) Date __________________________

(Please provide e-mail & phone number if out of Department)

**Signing this page indicates that both supervisors approve of the proposed project and have agreed upon the value and due dates for all course components.**

This information is collected under the authority of the Freedom of Information and Protection of Privacy Act and the Universities Act. It is required to document registration in the course and will form part of the student record. If you have any questions about the collection or use of this information, please contact BI 186.

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for Departmental use only

Departmental Approval (BI 186) __________________________ Date __________________________

_______ Approved ________ Forwarded to TT ________ Registered ________ DTTS
RETENTION OF DATA AND AUTHORSHIP AGREEMENT

The following constitutes an agreement between:

Colleague or Student: ______________________________________

Laboratory Supervisor: ______________________________________

This statement is to attest that, during the period of your research program in my laboratory, all original materials and data will be kept in a form that can be recovered and re-evaluated in the laboratory. All data and notebooks have to remain in the lab as required for publication purposes and pending federal and university regulations; failure to do so will result in a failing grade in the course. When your project is complete, you must also sign and submit the checklist on the next page to your Supervisor; failure to do so will result in a failing grade in the course.

Any person who has substantially contributed academically to a study being reported in a publication or presentation, either in the conception, design or execution of any experimental work, interpretation of data or drafting the article, should be included as an author or given other appropriate acknowledgement. It is understood that the results that you will produce in the laboratory may lead to primary publication(s) that may be co-authored by both of us following recognized journal rules. In any such case, neither of us shall submit any of this work for primary publication without the other, except by mutual consent.

In the case of such a joint authorship, it is your responsibility to provide up-to-date contact information to me after you leave the laboratory so that you can be contacted to provide input into manuscript preparation and give permission to have your name included as a co-author on the manuscript. Failure to update me with your contact information could jeopardize your co-authorship on future publications. Thus, should you not provide me with up-to-date contact information or should you refuse to be added as a co-author, I can submit work for primary publication without you as co-author.

I reserve the right to utilize any of these data for purposes of teaching, reviews, textbooks or grant applications. If I utilize any of your work for these purposes, I will acknowledge it by joint authorship, reference to your abstract, paper or thesis, or (if yet unpublished) by an appropriate statement such as ‘your name, unpublished observations’.

If you independently provide novel contributions to the work that results in a patent, your rights of partial ownership will be governed by the current rules for Intellectual Property as outlined on the webpage of the Office of Vice President Research (http://www.ucalgary.ca/research/office-vice-president-research/compliance)

Signatures:

_____________________________________  ___________________________
Supervisor                          Date

I agree with this statement:

_____________________________________  ___________________________
Colleague or Student                Date

This information is collected under the authority of the Freedom of Information and Protection of Privacy Act and the Universities Act. It is required to document the agreement. The information will form part of the student record. If you have any questions about the collection or use of this information, please contact BI 186.
The student (______________________) has cleaned up all of her/his laboratory experiments and instruments to the satisfaction of the supervisor.

The supervisor has been made aware of the presence of any hazardous materials and chemicals that the student has used, and arrangements have been made for proper storage or removal.

Biological materials generated during the course of the work have been disposed of, or properly preserved and stored with adequate documentation.

The student certifies that s/he has made mutually acceptable arrangements with the supervisor for the storage of all data, materials and documents generated during the project.

The student has provided up-to-date contact information and has submitted a final report to the Supervisor or Course Coordinator (or satisfactory arrangements have been made for the submission of this report). Please indicate these arrangements and initial (___): _____________________________________________________________

The student has returned all key(s) to the laboratory and any other work spaces to the Biological Sciences Office

Confirmation by Biological Sciences office staff (initial): ___________

When the student leaves the laboratory, all personal effects will have been removed and her/his laboratory space will have been left in a satisfactory condition. If the student has arranged to remain in the laboratory subsequent to the completion of this project, all of the criteria stated above must be fulfilled to the supervisor’s satisfaction before the student leaves the laboratory.

Signatures:

_____________________________________  ___________________________
Student  Date

_____________________________________  ___________________________
Supervisor  Date

_____________________________________  ___________________________
Co-Supervisor (if relevant)  Date

The Supervisor is responsible for submitted this completed and signed form to Heather Tompson in BI 186 when the student’s final grade is submitted. Grades for independent project courses will not be approved without submission of this form.