

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

<b>Course Code and Number:</b> BIO 421	<b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>														
<b>Course Full Title:</b> Special Topics in Applied Biology <b>Course Short Title:</b> Special Topics in Applied Bio <i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>															
<b>Faculty:</b> Faculty of Science	<b>Department (or program if no department):</b> Biology														
<b>Calendar Description:</b> Students will have an opportunity to explore a specialized aspect of biology with an expert in the field. Field trips and/or laboratory exercises will introduce methodologies of the specialist area. Note: Field trips outside of class time may be required.															
<b>Prerequisites (or NONE):</b>	Any three 200-level or above Biology courses.														
<b>Corequisites (if applicable, or NONE):</b>															
<b>Pre/corequisites (if applicable, or NONE):</b>															
<b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i> Former course code/number: Cross-listed with: Dual-listed with: Equivalent course(s): <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>	<b>Special Topics</b> <i>(Double-click on boxes to select.)</i> This course is offered with different topics: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i> <b>Independent Study</b> If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i> <input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit														
<b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Lecture/seminar hours</td> <td style="text-align: center;">15</td> </tr> <tr> <td>Tutorials/workshops</td> <td style="text-align: center;">15</td> </tr> <tr> <td>Supervised laboratory hours</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td style="text-align: right;"><b>Total hours</b></td> <td style="text-align: center;"><b>90</b></td> </tr> </table> Labs to be scheduled independent of lecture hours: <input type="checkbox"/> No <input type="checkbox"/> Yes	Lecture/seminar hours	15	Tutorials/workshops	15	Supervised laboratory hours	30	Experiential (field experience, practicum, internship, etc.)	30	Supervised online activities		Other contact hours:		<b>Total hours</b>	<b>90</b>	<b>Transfer Credit</b> Transfer credit already exists: <i>(See <a href="#">bctransferguide.ca</a>.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Submit outline for (re)articulation: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i> <b>Grading System</b> <input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit <b>Maximum enrolment (for information only):</b> 24 <b>Expected Frequency of Course Offerings:</b> As interest and instructors are available. <i>(Every semester, Fall only, annually, etc.)</i>
Lecture/seminar hours	15														
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<b>Total hours</b>	<b>90</b>														
<b>Department / Program Head or Director:</b> Gregory Schmaltz	<b>Date of meeting:</b> October 1, 2021														
<b>Faculty Council approval</b>	<b>Date of meeting:</b> November 5, 2021														
<b>Undergraduate Education Committee (UEC) approval</b>	<b>Date of meeting:</b> January 28, 2022														

**Learning Outcomes:**

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

1. Critically discuss theoretical and empirical approaches to the specialized area being studied.
2. Analyze relevant literature and present summaries and conclusions to the class.
3. Apply theoretical concepts to the understanding of local environments or laboratory situations.
4. Demonstrate the appropriate laboratory and/or field methods.

The course is expected to vary each time it is offered, depending on the specialist area to be investigated.

**Prior Learning Assessment and Recognition (PLAR)**

☒ Yes ☐ No, PLAR cannot be awarded for this course because

**Typical Instructional Methods** (*Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.*)

Course format may include lectures, case studies, laboratory sessions, seminars, and field trips as appropriate.

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials** (*If more space is required, download Supplemental Texts and Resource Materials form.*)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.		<input type="checkbox"/>		
2.		<input type="checkbox"/>		
3.		<input type="checkbox"/>		
4.		<input type="checkbox"/>		
5.		<input type="checkbox"/>		

**Required Additional Supplies and Materials** (*Software, hardware, tools, specialized clothing, etc.*)

**Typical Evaluation Methods and Weighting**

Final exam:	25%	Assignments:	%	Field or laboratory research project:	50%	Portfolio:	%
Midterm exam:	%	Project:	%	Lab work or field experience:	25%	Field experience:	25%
Quizzes/tests:	%	Practicum:	%	Shop work:	%	Total:	100%

**Details (if necessary):**

**Typical Course Content and Topics**

Examples of topics:

**Riparian Ecology**

This course will look at the stream and river bank communities of local watercourses. The influence of flooding regimes, plant and animal communities, land use, and nutrient flows on streams and rivers in the Fraser Valley will be studied. The impact of urban growth and agricultural and forestry practices on riparian zones will be investigated, as will local examples of restoration of degraded systems to healthy river banks.

**Invasive Species Biology**

This course will examine how exotic species are affecting the composition and functioning of local ecosystems in the Fraser Valley. The lectures and field experiences will investigate classical and local examples of the impact of invasive species, stages of the invasion process, and how human activity can accelerate or reduce the impact of exotic species.

**Molecular Population Genetics**

This course will cover DNA extraction, amplification, and sequencing techniques to examine the genetic population structure of an intertidal sea cucumber species. Once sequences are obtained the students will learn how to analyze this type of data using commonly available software to apply the latest theories in population genetics. A literature review in the area of population genetics and geographical structure will also be undertaken.