

## Unit 2 - Biology Course Outline



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THE UNIVERSITY OF BRITISH COLUMBIA

IKBSAS Unit 2 - BIOLOGY  
Okanagan Campus

### **BIOL 117, Section 101** Evolution and ecology (3 credits) 2024/25 W T1 **WF 2:00p-3:30p, LIB 312**

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The UBC Okanagan campus is situated on the traditional, ancestral and unceded territory of the Syilx Okanagan Nation and their peoples, who have used this site for millennia to pass on in their culture, history, and traditions from one generation to the next. The relationship between the Syilx Okanagan Nation and UBC Okanagan is an important part of our institution's history, and it's important to respectfully acknowledge that. For more information please see: <https://ok.ubc.ca/about/indigenous-engagement/>

#### **Instructor:**

Dr. Matthew K Nelson  
SCI 160  
Phone: 250-807-9683 (i won't get messages)  
[matthew.nelson@ubc.ca](mailto:matthew.nelson@ubc.ca)  
<http://www.natureboy.com>

**Office Hours:** TTh 11a-12p, SCI 160

#### **Academic calendar entry:**

##### **BIOL 117 (3 credits) (Evolution and Ecology)**

Evolutionary theory and its underlying genetic basis; population, community, ecosystem, and behavioural ecology. Specific case studies and current environmental concerns. Recommended for Arts or Education students, in conjunction with BIOL 122. BIOL 117/122 cannot be used in place of BIOL 116/125 for those degree programs that require BIOL 116/125. Credit will not be granted for both BIOL 117/122 and BIOL 116/125. [3- 3-0]

#### **Course Objectives:**

The purpose of this course is to provide students with a basic understanding of the current state of evolutionary and ecological thought.

#### **Learning outcomes:**

By the end of this course students should have a clearer understanding of some of the basic concepts associated with ecology and evolution. Hopefully this will enable students to:

1. delve further into these topics if they wish
2. think critically about articles encountered in the popular press

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3. converse in a knowledgeable fashion on issues pertaining to evolution and ecology
4. understand a little more about how the natural world around us works and how the scientific process elucidates the workings of that world.

### **Course Format:**

Course material is presented in standard lecture format. The textbook provides additional explanation and examples of most topics, and is the source of many of the pictures and diagrams presented in lecture. The lectures may present some material not found in the textbook. You will need to attend class. From time to time I may post supplementary material on **Canvas**. Because of the size of the class, evaluation of lecture material is by examination.

### **Evaluation criteria and grading:**

Midterm #1	30%	oct 11
Midterm #2	30%	nov 8
daily assignments	10%	
Final	30%	<b>TBA</b>
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Total	100%	

Final grades will be based on the evaluations listed above and the final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar. The Barber School reserves the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or the school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school (<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>).

**If you are sick, it is important that you stay home.**

**If you miss class because of illness:**

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- Make a connection early in the term to another student or a group of students in the class. You can help each other by sharing notes. If you don't yet know anyone in the class, post on the discussion forum to connect with other students.
- Consult the class resources on Canvas.
- Use the discussion forum for help.
- Attend office hours.
- If you are concerned that you will miss a key activity due to illness, contact the instructor to discuss.
- If you are feeling ill and cannot attend class for a midterm or in-class assessment: Please email the instructor right away. If you arrive for a test and you are clearly ill, we will make alternate arrangements with you. It is better to email ahead of time and not attend.

**If you are feeling ill at the time of a final exam:** Do not attend the exam. You must apply for deferred standing (an academic concession) through the Dean's office. Students who are granted deferred standing (SD) will write the final exam/assignment at a later date.

**If I (the instructor) am feeling ill:** If I am unwell, I will not come to class. I will make every reasonable attempt to communicate plans for class as soon as possible (by email, on Canvas, etc.). Our classroom will still be available for you to sit in and attend an online session. In this instance:

- I may ask you to do an activity or read something in place of class time
- If I am well enough to teach, but am taking precautions to avoid infecting others, we may hold the class online. If this happens, you will receive [an email, an announcement in Canvas...] informing you how to join the class.
- If I am well enough to teach, I may also record the class and ask you to watch the video posted in Canvas on your own time.

### **Final Examination:**

The examination period for 2024/25 Winter Term 1 is (DEC 9-20), including weekends. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be

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limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job. Further information on Academic Concessions can be found under Policies and Regulations in the Okanagan Academic Calendar <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>. Out-of-time examination forms can be found at (<http://ikbsas.ok.ubc.ca/students/undergrad/forms.html>) and must be sent to the Dean's office.

### Required Materials:

**Text:** *Biology: Concepts and Connections*, 9th edition Campbell, Reece, Taylor and Simon

### Missed Assignments and Exams:

From UBC Okanagan Academic Calendar/Policies and Regulations/Academic Concession:

"Students who, because of unforeseen events, are absent during the term and are unable to complete tests or other graded work, should normally discuss with their instructors how they can make up for missed work, according to **written guidelines given to them at the start of the course**. Instructors are not required to make allowance for any missed test or incomplete work that is not satisfactorily accounted for. If ill health is an issue, students are encouraged to seek attention from a health professional. Campus Health and Counselling will normally provide documentation only to students who have been seen previously at these offices for treatment or counselling specific to conditions associated with their academic difficulties.

Students who feel that requests for consideration have not been dealt with fairly by their instructors may take their concerns first to the Head of the discipline, and if not resolved, to the Office of the Dean. Further information can be found at:

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>.

**Guidelines for BIOL 117:** Students are responsible for attending all lectures, and are responsible for completing all assignments and examinations. If you know that you will be absent for any component of the course for which you will be evaluated you **MUST** make arrangements with the instructor prior to your absence. If you are absent due to unforeseen circumstances you **MUST** see the instructor upon your return to determine if arrangements can be made to to make up any missed assignments or tests. Students may be excused from scheduled exams only with a physician's certificate verifying illness or other supporting documents for a compassionate leave. If a student is unable to complete a midterm examination for a good and verifiable

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reason, it may be possible for the comprehensive final to be increased in value accordingly.

### Lecture Outline:

target date	lecture topic	chapter, 9th ed.
sep 4	syllabus	1
sep 6-13	introduction	1
	molecules of cells	3
	tour of the cell	4
sep 18-20	molecular biology - genes	10
sep 25-27	cellular division and inheritance	8
oct 2-4	patterns of inheritance	9
	control of genes	11
oct 9-11	how populations evolve	13
	<b>MIDTERM 1 (oct 11)</b>	.
oct 16-18	microevolution	13
oct 23-25	speciation	14
oct 30-nov 1	systematics	15
nov 6-8	macroevolution	15
	<b>MIDTERM 2 (nov 8)</b>	
<b>nov 11-15</b>	<b>MIDTERM BREAK (no classes)</b>	
nov 20-22	behavioral ecology	35
nov 27-29	population ecology	36
	community structure and dynamics	37
dec 4-6	ecosystem structure and dynamics	37
	conservation biology	38
TBA	<b>FINAL EXAM</b>	

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### **Academic Integrity:**

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the break down of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

A more detailed description of academic integrity, including the policies and procedures, may be found at: <http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0>

If you have any questions about how academic integrity applies to this course, please consult with your professor.

### **Disability Resource Centre**

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The Disability Resource Centre (DRC) facilitates disability-related accommodations and programming initiatives that ameliorate barriers for students with disabilities and/or ongoing medical conditions. If you require academic accommodations to achieve the objectives of a course, please contact the DRC at:

**UNC 215** 250.807.8053

Email: [drc.questions@ubc.ca](mailto:drc.questions@ubc.ca)

Web: <https://students.ok.ubc.ca/academic-success/disability-resources/>

### **Equity and Inclusion Office**

Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's Human Rights Code. If you require assistance related to an issue of equity, educational programs, discrimination or harassment please contact the EIO.

**UNC 325H** 250.807.9291

Email: [equity.ubco@ubc.ca](mailto:equity.ubco@ubc.ca)

Web: <https://equity.ok.ubc.ca/>

### **Resources for Indigenous Students:**

Indigenous Programs & Services provides community and culturally appropriate services and support to First Nation, Métis, and Inuit Students. You belong here.

The Indigenous Centre, located on the second floor of the University Centre building (UNC 210), provides a sense of belonging and community to First Nations, Métis, and Inuit students. This home away from home is committed to enriching the quality of the student experience for Indigenous students by promoting access, providing capacity building opportunities, and celebrating success.

Website: <https://students.ok.ubc.ca/indigenous-students/>

### **Office of the Ombudsperson for Students**

The Office of the Ombudsperson for Students is an independent, confidential and impartial resource to ensure students are treated fairly. The Ombuds Office helps students navigate campus-related fairness concerns. They work with UBC community members individually and at the systemic level to ensure students are treated fairly and can learn, work and live in a fair, equitable and respectful environment. Ombuds helps students gain clarity on UBC policies and procedures, explore options, identify next steps, recommend resources, plan strategies and receive objective feedback to promote constructive problem solving. If you require assistance, please feel free to reach out for more information or to arrange an appointment.

**UNC 217** 250.807.9818

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Email: [ombuds.office.ok@ubc.ca](mailto:ombuds.office.ok@ubc.ca), Web: [www.ombudsoffice.ubc.ca](http://www.ombudsoffice.ubc.ca)

### **Student Learning Hub**

The Student Learning Hub is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with academic integrity, study skills and learning strategies**. Students are encouraged to visit often and early to build the skills, strategies and behaviours that are essential to being a confident and independent learner. For more information, please visit the Hub's website.

**LIB 237** 250.807.8491

Email: [learning.hub@ubc.ca](mailto:learning.hub@ubc.ca)

Web: <https://students.ok.ubc.ca/academic-success/learning-hub/>

### **Student Wellness**

At UBC Okanagan health services to students are provided by Student Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Student Wellness for more information or to book an appointment.

**UNC 337** 250.807.9270

Email: [healthwellness.okanagan@ubc.ca](mailto:healthwellness.okanagan@ubc.ca)

Web: <https://students.ok.ubc.ca/health-wellness/>

### **Independent Investigations Office (IIO):**

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the IIO. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the IIO

([investigationsoffice.ubc.ca](http://investigationsoffice.ubc.ca)):

Email: [director.of.investigations@ubc.ca](mailto:director.of.investigations@ubc.ca)

Telephone: 604.827.2060

### **SAFEWALK**

*Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at **250-807-8076**.*



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*For more information, see: <https://security.ok.ubc.ca/safewalk/>*