



**BIOL 117, Section 101**  
Evolution and ecology (3 credits)  
2025/26 W T1  
**MW 11:00a-12:30p, ART 112**

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  
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<http://www.natureboy.com>



**Office Hours:** MW 2-3p, SCI 160

**About me:** My research background is mainly focused on the behavioral ecology and life history of wolf spiders and other arachnids. I have also done some work with snakes, lizards, and salamanders. My current interests include arachnology, entomology, and herpetology. Originally from Texas, I moved to British Columbia in 2013 and currently reside in Penticton.

**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
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**.

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

Midterm #1	30%	oct 8
Midterm #2	30%	nov 17
daily assignments	10%	
Final	30%	<b>TBA</b>
<hr/>		
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 (<https://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>).

**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.

### **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>.

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

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

- 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.
- Attend office hours.
- If you are feeling ill and cannot attend class for a midterm or in-class assessment: Please email the instructor right away.

**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.

**If you are sick and have to miss an exam:** Please email me as soon as possible to let me know what is going on. Then, once you are well, email me and we can probably schedule a makeup exam at a time that works for me.

**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. (<https://science.ok.ubc.ca/student-resources/undergrad/student-forms/>)

### **Final Examination:**

The examination period for 2025/26 Winter Term 1 is (DEC 8-19), 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 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 (<https://science.ok.ubc.ca/student-resources/undergrad/student-forms/>) and must be sent to the Dean's office.

### **Required Materials:**

**Text:** *What Is Life? A Guide to Biology with Physiology 5e*, Jay Phelan. W.H. Freeman & Company, 2025. ISBN: 9781319621759



### Lecture Outline:

target date	lecture topic	chapter, Phelan text
sep 3	syllabus	1
sep 8-10	introduction	1
	molecules of cells	3
	tour of the cell	4
sep 15-17	molecular biology - genes	6
sep 22-24	cellular division and inheritance	8
sep 29- oct 1	patterns of inheritance	9
oct 6-8	<b>MIDTERM 1 (oct 8)</b>	.
oct 15	microevolution	10
oct 20-22	speciation, macroevolution	12
oct 27-29	systematics	12
nov 3-5		
<b>nov 10-14</b>	<b>MIDTERM BREAK (no classes)</b>	
nov 17-19	<b>MIDTERM 2 (nov 17)</b>	11
	behavioral ecology	
nov 24-26	population ecology	16
dec 1-3	community structure ecosystem structure and dynamics	17
TBA	<b>FINAL EXAM</b>	

**Copyright disclaimer:** Diagrams and figures included in lecture presentations adhere to Copyright Guidelines for UBC Faculty, Staff and Students <http://copyright.ubc.ca/requirements/copyright-guidelines/> and UBC Fair Dealing Requirements for Faculty and Staff <http://copyright.ubc.ca/requirements/fair-dealing/>. Some of these figures and images are subject to copyright and will not be posted to **Canvas**. All material uploaded to **Canvas** that contain diagrams and figures are used with permission of the publisher; are in the public domain; are licensed by Creative Commons; meet the permitted terms of use of UBC's library license agreements for electronic items; and/or



adhere to the UBC Fair Dealing Requirements for Faculty and Staff. Access to the **Canvas** course site is limited to students currently registered in this course. Under no circumstance are students permitted to provide any other person with means to access this material. Anyone violating these restrictions may be subject to legal action. Permission to electronically record any course materials must be granted by the instructor. Distribution of this material to a third party is forbidden.

### **Academic Integrity:**

Academic integrity is integral to UBC as an institution of higher learning and research. Violations of academic integrity (i.e., [academic misconduct](#)) harm the academic enterprise; as a result, serious consequences arise and penalties may be 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 for consideration for academic discipline. Careful records are kept to monitor and prevent recurrences. Any instance of cheating or taking credit for someone else's work, whether intentionally or unintentionally, can and often will result in at minimum a grade of zero for the assignment, and these cases will be reported to the Head of the Department and Associate Dean Academic of the Faculty.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the [Academic Calendar](#).

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

[AIM](#) is a program that provides help and support with academic integrity (AI) issues for undergraduate and graduate students. Please contact [aim.ok@ubc.ca](mailto:aim.ok@ubc.ca) for any questions or for a 1-on-1 appointment with an AIM consultant.

### **UBC Values:**

UBC creates an exceptional learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada, and the world. UBC's core values are excellence, integrity, respect, academic freedom, and accountability.



### **Policies and Regulations:**

Visit [UBC Okanagan's Academic Calendar](#) for a list of campus-wide regulations and policies, as well as [term dates and deadlines](#).

### **Resources to Support Student Success**

Visit the [Student Support and Resources page](#) to find one-on-one help or explore resources to support your experience at UBC Okanagan, as well as many other campus services available to all students.

### **Disability Resource Centre**

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

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 (<https://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**.*

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