Organisms & Their Environment 1
BIOL 1113/1110L

Instructors	**Dr. Garett Allen** (he/him) (lecture, FA01)	**Dr. N. Kirk Hillier** (lecture, FA02)	**Ms. Kendra Sampson** (lab)
Office	MacAskill Hall 100	MacAskill Hall 104	MacAskill Hall 224
Phone	(902) 585-1195	(902) 585-1314	
Email	garett.allen@acadiau.ca	kirk.hillier@acadiau.ca	kendra.sampson@acadiau.ca
Office Hours	Monday – 3:00-4:30pm Tuesday – 10:00-11:30am others by appointment	Monday, Wednesday 10:30-11:30; 12:30-1; Thursday 10-12; *by appointment only*	Tuesday 8:30am-11:30am, 1pm-4pm; Thursday 8:30am-11:30am, 1pm-4pm

Lectures:
Beveridge Arts Center Room 132
FA01: M/W/F, 8:30 – 9:20am
FA02: M/W/F, 9:30 – 10:20am
All lectures are offered in-person

Labs:
FA01 – MAH 220/230, 8:30 – 11:20 am
FA02 – MAH 220/230, 1:00 – 3:50 pm
FA03 – MAH 220/230, 1:00 – 3:50 pm
FA04 – MAH 230, 8:30 – 11:20 am
FA05 – MAH 220/230, 1:00 – 3:50 pm

Evaluation	Percentage	Date
Quizzes	5%	Weekly – see Assessments and Grading
Midterm #1	15%	October 9th
Midterm #2	15%	November 16th
Final Exam	35%	TBD
Labs	30%	See Assessments and Grading

Part 1: Course Information

Course Description

An introduction to ecology and the foundation of genetics. Within the laboratory section of the course, students will study the ecological forces that affect organismal survival within an ecosystem.

Prerequisite(s): None

Course Materials & Requirements

Required Text

- Brooker, Widmaier, Graham and Stiling, 2022. *Biology* (Sixth edition), McGraw-Hill

Education. Earlier editions, and used texts, should also work.

Other Requirements

- Suitable clothing for outdoor lab excursions (*i.e.*, rubber boots, rain jackets)
- Access to a computer, laptop, or equivalent capable of accessing…
  - The course Moodle page
  - Microsoft Teams and Office 365
  - Vaughn Memorial Library's Biology LibGuide
- Access to a printer to print lab exercises before attending lab sessions

Course Structure

Lectures

Lectures will be held in person and take place during 50-minute lecture slots. Lecture slides will be made available on Moodle; recorded lectures will not be provided. Students are expected to attend all lectures in person.

Lecture Section FA01: M/W/F, 8:30AM-9:20AM.

Lecture Section FA02: M/W/F, 9:30AM-10:20AM.

Lectures will be held in Beveridge Arts Centre (BAC), Room 132.

Labs

Labs will be held in person and take place during 170-minute lab slots held in MacAskill Hall 220 and 230 (main floor across from the main doors). **Please note, labs will begin the week of Sept 14, 2025.**

Attendance to your scheduled laboratory section is mandatory. Please check your schedule to confirm your section:

Section	Day and Time	Room
FA01	Tuesday, 08:30AM-11:20AM	MAH 220/230
FA02	Tuesday, 1:00PM-3:50PM	MAH 220/230
FA03	Wednesday, 1:00PM-3:50PM	MAH 220/230
FA04	Thursday, 08:30AM-11:20AM	MAH 230
FA05	Thursday, 1:00PM-3:50PM	MAH 220/230

Student Learning Outcomes

The lecture component of this course establishes basic concepts in Biology and will help you develop a foundation in ecology and Mendelian genetics by introducing you to the material listed below.

1. Principles and theory of evolution and ecology
2. Interactions between organisms and their environment at a wide range of scale
3. Principles of Mendelian genetics and inheritance
4. The role of humans in the environment and ecosystems broadly

The laboratory component of this course familiarizes yourself with the practice of science and establishes fundamental skills that are necessary to carry out biological science. By the end of the semester, students will be able to:

1. Identify and apply the fundamental principles of science
2. Collect, present and analyze simple ecological data
3. Describe the consequences of environmental variability in the role of organisms in their environment

How to Meet the Learning Outcomes

You will meet the objectives listed above through a combination of the following activities in this course:

1. Attend lectures and laboratory exercises actively – take notes, participate in discussions and activities, and ask for clarification when something is unclear
2. Study on a regular basis and complete the suggested readings from the textbook
3. Read and review laboratory exercises before arriving for your laboratory session
4. Be mindful of evaluations which include online quizzes, 2 midterms, one final exam as well as laboratory marks

Part 2: Course Plan

The lecture and laboratory schedules below are tentative. Instructors reserve the right to amend the course plan with reasonable notice, and in consultation with the class.

Tentative Lecture Schedule:

Letters indicate lecture delivery by Dr. Allen (A), Dr. Hillier (H), or Kendra Sampson (S)

Date	Topic
Sept. 9-11	Introduction to BIOL 1113 (A, H, S); the Culture and Practice of Science (A)

Sept. 14-18	Darwin and Evolution (A); Cell Structure and Function x2 (A)
Sept. 21-25	Mitosis and Meiosis x3 (H)
Sept. 28-Oct. 2	Mendelian Inheritance (H), **National Day for Truth and Reconciliation – No class**, Mendelian Inheritance (H)
Oct. 5-9	Mendelian Inheritance (H); Non-Mendelian Inheritance & Epigenetics (A), **Friday, Oct. 9 – 1st Midterm**
Oct. 12-16	**Thanksgiving & Fall Study Break – No classes**
Oct. 19-23	*Traditional Knowledge (guest lecture, Melissa Labrador)*; Population Ecology x2 (H)
Oct. 26-30	*Biological Surveys and their Practical Importance (guest lecture, Dr. Jeffrey Clements, Fisheries and Oceans Canada)*; Behavioural Ecology (H), Species Interactions (H)
Nov. 2-6	Species Interactions (H); Community Ecology x2 (H)
Nov. 9-13	Community Ecology (H); **Remembrance Day – No class**, *Conservation in National Parks (guest lecture, Dr. Matthew Smith, Parks Canada)*
Nov. 16-20	**Monday, Nov. 16 – 2nd Midterm;** Ecosystems (A), *Bay of Fundy Ecosystems (guest lecture, Dr. Mike Stokesbury)*
Nov. 23-27	Ecosystems (A), Biomes and the Biosphere x2 (A)
Nov. 30-Dec. 4	Challenges to Biodiversity x3 (A)
Dec. 7-9	Review x2 (A, H; question and answer format)

Tentative Lab Schedule:

Date	Topic
Sept. 9-11	**No Labs – First Week of Classes**
Sept. 14-18	Lab #1 - Scientific Method and Literature
Sept. 21-25	Lab #2 - Salt Marsh Field Trip (Wolfville Salt Marsh, Outdoor Clothing *and* Rubber Boots Required)
Sept. 28-Oct. 2	**No Labs – National Day for Truth and Reconciliation**
Oct. 5-9	Lab # 3 - Applying the Scientific Method
Oct. 12-16	**No Labs – Thanksgiving & Fall Study Break**

Oct. 19-23	Lab # 4 - Dichotomous Keys (Botanical Gardens, Outdoor Clothing Required)
Oct. 26-30	Lab #5 - Ecological Sampling Techniques (Woodland Trail, Outdoor Clothing Required)
	Quiz 1 (Material from Labs 1 – 4)
Nov. 2-6	Lab # 6 – Community Ecology
Nov. 9-13	**No Labs – Remembrance Day**
Nov. 16-20	Lab # 7 – Scientific Writing
Nov. 23-27	Lab # 8 – Data Analysis
	Quiz 2 (Material from Labs 5 – 7)
Nov. 30-Dec. 9	**No Labs – Lab Reports due on Moodle**

Part 3: Assessment and Grading

Lecture Attendance

Lecture attendance is expected of all students, though attendance is not recorded/penalized.

Lecture Quizzes

Lecture quizzes will take place online via Moodle and will be made available to you at the end of the relevant week. They can be completed at any time, from wherever you happen to be, and are graded based on participation.

You must complete 8 quizzes before the final exam begins to receive full credit. If less than 8 quizzes are completed before the final exam begins, each completed quiz will count toward 0.625% of your final grade.

Midterm Tests and the Final Exam

Midterm tests will take place online via Moodle and will be written during your scheduled lecture time and withing the classroom on **OCTOBER 9** and **NOVEMBER 16**. These non-cumulative midterm tests consist of multiple-choice questions and are closed-book. Accessing or viewing course material during these tests and exams will be considered an act of Academic Dishonesty.

The Final Exam will take place online via Moodle during the December exam period at a location and date specified by the Registrar. The cumulative Final Exam consists of multiple-choice questions and is closed-book. Accessing or viewing course material during this exam will be considered an act of Academic Dishonesty.

For both midterm tests and the final exam, you are responsible for bringing your laptop and ensuring that it is sufficiently charged – electrical outlets are extremely limited in most lecture halls. Moodle exams will also require installation of a lockdown browser to access and open the exam. If you are registered with Accessibility Services, appropriate accommodation will be provided.

Make-up tests and exams for absence or poor performance will not be provided as an option. In the event that you have a valid excuse for missing either of the midterms, the weight from the missed midterm(s) will automatically be distributed across the other midterm and the final. Missed midterms without a valid excuse from the registrar will result in a mark of zero. University policies on missing classes, etc. can be found here:

https://registrar.acadiau.ca/RecordsandOtherRequests.html

Laboratory Attendance, Assignments and Assessments

All laboratory exercises will be available on Moodle. **You are responsible for printing and reading the lab exercises before coming to class.**

Materials for the scheduled labs will be posted on Moodle by Friday on the week before the lab is scheduled to take place.

Other handouts and links of interest will be posted on the Moodle page.

Attendance in labs

Labs will be delivered in-person, only in the event of a campus closure (due to weather) the labs will be cancelled for that day. You will be notified via e-mail and Moodle in the event of a change.

Lab attendance is mandatory. As per our policy in Biology, you must pass the lab to pass the entire course. Failing the lab will result in failing the entire course. Makeup labs will only be considered after presentation of suitable documentation of illness or serious extenuating circumstances, and only if you contact the *lab coordinator* - Kendra - before the absence. Please notify the lab coordinator as soon as you miss or know that you will miss a particular lab.

Makeup labs are only possible if arranged ahead of time. Once the last section (FA05: Thursday 1:00-3:55pm) is completed, it is not possible to make-up that week's lab. In the case of justified absences in which the student is not able to make up the lab, the weight from the missed lab will be calculated based on the average of attended lab grades. A grade of zero will

be assigned for unjustified missed work. In the case of unjustified absence, the student will also receive a zero on the hand-in assignment for the respective missed lab/tutorial.

Graded Lab Activities

This is a *general* description of how the student's performance in the lab will be assessed, the number of activities and final weight in each category may change but the general activities will be maintained:

Activity	Grade	Due Date
Hand-in assignments	40%	End of each lab
Pre-lab quizzes	20%	Beginning of each lab
Quiz 1	10%	Oct 21, 22 and 23
Quiz 2	10%	Nov 18, 19 and 20
Lab report	20%	Nov 25, 26 and 27

** The lab mark will account for 30% of the total marks for BIOL 1113*

1) The *hand-in assignments* are part of each lab exercise and *must* be completed during the lab session. Make sure to hand it in to your TA before you leave the lab.

2) The *pre-lab quizzes* are to be completed on Moodle before the start of your designated lab time.

3) Q*uiz 1* will be completed at the beginning of lab.

4) Quiz 2 will be completed at the beginning of lab.

5) Lab report will contain the Introduction (and hypothesis), materials and methods, and results (including graphs and or tables summarizing the results of the data you will collect and analyze during the semester).

Numeric and Letter Grading System

Please note that the course will follow the numerical: letter and GPA conversion systems approved by the University Senate where:

Letter Grade	Numeric Value (%)	GPA
A+	90-100	4.33
A	85-89	4.00
A-	80-84	3.67
B+	77-79	3.33
B	73-76	3.00
B-	70-72	2.67
C+	67-69	2.33

C	63-66	2.00
C-	60-62	1.67
D+	57-59	1.33
D	53-56	1.00
D-	50-52	0.67
F	<50	0.00

Part 4: Course Policies

Students are expected to attend all class sessions in person as listed above.

Laboratory attendance is mandatory.

Part 5: University Policies

University policies are available in the Acadia University Academic Calendar or through the Registrar's website: https://registrar.acadiau.ca/welcometotheregistrarsoffice.html

Equity, Diversity and Inclusion

Acadia University is committed to becoming a culturally safe and anti-oppressive community. This can only be achieved where there are simultaneous efforts to eliminate all forms of discrimination and harassment from our campus community, including the elimination of all discrimination, harassment and violence based on one's identity, including but not limited to, gender, race, class, ethnicity, sexual orientation, disability, gender identity, gender expression, and Indigeneity. The policy against harassment and discrimination, and resources for students who believe they may have experienced, or witnessed, discrimination or harassment, are available here: https://www2.acadiau.ca/student-life/equity-judicial/equity.html

Last Drop Day

Last day to drop a course and receive a "W". Please check the Acadia University calendar dates, which are available here: https://registrar.acadiau.ca/AcademicCalendars.html

Inform Your Instructor of Accommodations

Acadia University is dedicated to improving access to campus life for all students with disabilities. While we attempt to ensure that all courses are accessible, we recognize that there are barriers that need to be addressed on an individual basis. Students who require accommodations to complete coursework or otherwise fully participate in class should contact Accessible Learning Services directly as soon as possible: https://www2.acadiau.ca/student-life/accessiblelearning.html. Acadia's Policy for Students with Disabilities can be found here: https://senate.acadiau.ca/tl_files/sites/senate/Senate%20Policies/Jan%202015%20Revised%20Policy%20Regarding%20Support%20for%20Students%20with%20Disabilities.pdf

The Use of Animals in Teaching and Research

The use of animals in teaching and research at Acadia University is done in accordance with guidelines on the care and use of animals published by the Canadian Council on Animal Care (CCAC). For more information on the CCAC, please visit their website at http://www.ccac.ca

Commitment to Integrity

It is standard practice in Biology to check exams and assignments for cheating and plagiarism. Cheating in the class and/or lab, including plagiarism, will not be tolerated. Please read the appropriate sections of the current Acadia University Academic Calendar: https://registrar.acadiau.ca/AcademicCalendars.html

Information on copy-write and course content from Acadia University is available through the Vaughan Memorial Library: http://libguides.acadiau.ca/c.php?g=433650&p=5027078

The spoken and written course content (including the syllabus, handouts, lectures, presentations, labs, assignments, quizzes, tests, and exams) are the intellectual property of the instructor and may only be copied for personal use. Sharing these materials or uploading them where they may be accessed by others is a violation of copyright. If you wish to make audio, video, or photographic recordings in class, you must first obtain the consent of the instructor and of any other persons (e.g., guest speakers, other students) who may be captured in such recordings. The instructor's consent shall not be unreasonably withheld.

Use of artificial intelligence tools by students to assist with their learning is allowed only if: prior permission has been given by the course professor/instructor, and the student properly credits/cites how the AI technology was used in their work. AI must be used in an ethical and responsible manner as a positive learning tool. AI may not be used in ways that violate Acadia's Academic Integrity Policy. Students are reminded that plagiarism, or other forms of cheating, are both types of academic dishonesty.

Share the Air Policy

In consideration of the difficulties that exposure to scented products causes individuals with sensitivities and allergies, all students, faculty, staff, employees of any companies working on university property, visitors, and guests of Acadia University, or of members of the University community are asked to refrain from wearing scented personal care products such as perfumes / aftershave, lotions, hair spray and deodorant. In addition, users of tobacco and cannabis are asked to be aware that odours associated with product use may impact individuals with sensitivities and allergies. Acadia University in consultation with its contracted cleaning staff, have agreed to use products that do not leave residual odors that may cause difficulties for individuals with sensitivities and allergies. https://hr.acadiau.ca/employment/university-policies.html

Part 6: Program Learning Outcomes

Foundations of knowledge	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Scientific method, inquiry and hypothesis testing	Find, understand and apply information from the literature; understand how to use the scientific method to examine problems from different perspectives	Hypothesis testing, introduction to the scientific method and discovery science	1 - Introduction
Historical concepts and contributions by important figures	Explain foundational concepts in biology, Two-eyed Seeing, and ethical implications of scientific discoveries	Contributions by key figures in evolutionary theory, cell structure and inheritance	1 - Introduction
Biodiversity and ecology	Understand the genetic, taxonomic and ecosystem levels of biodiversity; focus on SW Nova including the Acadian Forest and Bay of Fundy ecosystems	Population, behavioural, and community ecology units; species interactions and ecosystem dynamics	1 - Introduction
Genetics and evolution	Understand the chemical basis of heredity, genetics and genomics; integrate concepts across disciplines to understand evolution	Mendelian and Non-Mendelian Inheritance, Darwinian Evolution	1 - Introduction
Human and environmental health	Understand form and function in health and disease within a One Health framework, integrating human and environmental health	Role of humans and anthropogenic input on environmental conditions and impacts on biodiversity	1 - Introduction
Lab and field skills	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Experimental design	Gain experience in applying the scientific method	Term project applying scientific method	1 - Introduction
Safety	Work safely and productively in lab and field settings	Basic lab and field safety	1 – Introduction

Lab skills	Gain experience with basic and advanced lab techniques and understand their application in research, health science and industry	Sample preparation and preservation, observations	1 – Introduction
Field skills	Gain experience in basic and advanced field skills and understand their application in ecology, conservation biology and environmental change	Observations, use of dichotomous keys for identification, sampling methods for ecological monitoring	1 – Introduction
Data acquisition, analysis and interpretations	Collect data, present results both qualitatively and quantitatively, and interpret outcomes in light of the literature	Data collection, analysis and presentation for basic visualization and reporting	1 - Introduction
Statistical analysis	Use R and or other programs to analyze biological data	Basic statistical analysis to inspect data and assess statistical significance	1 – Introduction
Professional skills	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Ethical practices	Demonstrate ethical conduct, apply principles of academic integrity, and understand the principles of EDI in science	Ethical practices in research, incorporation of indigenous knowledge in biological sciences	1 - Introduction
Collaboration and group work	Work effectively in groups within and across disciplines	Lab exercises while working in small groups; group discussions	1 – Introduction
Critical thinking	Analyze and evaluate information to make science-based decisions	Problem solving and evaluation of data within the lab or course content	1 – Introduction
Computer proficiency	Use common and discipline-specific software	Use of excel and basic computer software for visualization and data analysis/handling	1 – Introduction

Scientific communication	Communicate science effectively to both scientific and general audiences	Report development	1 - Introduction