



BIOL1013 Organisms and the Environment

Course Outline for Summer 2021

Instructor: Victoria Heath
Email: heathls@uwindsor.ca or through course Blackboard Website

Lectures: Asynchronous lectures posted on Blackboard (twice a week)

Office Hours: By appointment (on Zoom or TEAMS)

Course Graduate Teaching Assistant:
N/A

Course Website: Blackboard

Materials:

Required text:

Reece, JB, MR Taylor, EJ Simon, JL Dickey, KG-E Scott. 2014. Biology: Concepts & Connections. 1st Canadian Edition. Pearson Canada Inc.

Available at the bookstore as:

Campbell Biology – Hardcover available

Online version - TBA

Course Description:

Undergraduate Calendar: Organisms interacting with other organisms and with their physical environment. Ecological impacts of human activity. This course is offered on-campus and as a distance course. (Intended for non-majors and students requiring preparation for BIOL-1111 and BIOL-1101.) (Not counted for credit in any Faculty of Science program.) (2 lecture hours a week.)

This course, with BIOL1003, provides a basic knowledge of biology that will allow you to better understand important issues, some extremely controversial, that face our society today. This Organisms and the Environment course will study evolution (at three different levels), ecology (at the individual to biosphere levels), and some plant and animal anatomy and physiology (if time allows). No pre-requisite is required however any Biology background knowledge is an asset. This course cannot be used to fulfill a first year Biology course for Science majors.

Learning Outcomes:

When you have completed this course, you should be able to:

1. Differentiate between the hierarchical levels of biological study and describe how they relate to each other.
2. Define the term evolution and use evidence provided by Darwin and other discoveries to indicate that it is occurring in nature.
3. Describe Darwin's theory of Natural Selection, indicating the importance of variation and the different types of natural selection that can occur.
4. Define microevolution and related terms, using use this information and HWE (and its assumptions) to determine whether microevolution is occurring.
5. Define macroevolution and describe factors that have fostered this process.
6. Define a species using various concepts and relate to the importance of various types of reproductive barriers.
7. Differentiate between two types of speciation, describing the possible outcomes in a hybrid zone, and the speed of speciation using two different models.
8. Describe and differentiate between the processes of microevolution, macroevolution, and speciation.
9. Describe how organisms (named by Linnaeus binomial system) are classified using cladistics analysis and the relevance of convergent versus divergent evolution.
10. Define ecology and describe differences between the various levels of this discipline.
11. Differentiate between the various aquatic and terrestrial ecosystems, explaining how climatic factors affect them.
12. Describe the various factors that determine population abundance and growth, as well as the interactions within and between populations, including human populations.
13. Identify and describe the different types of interactions occurring at the community level, including competition, predation, herbivory, and symbiotic interactions.
14. Explain the movement of energy and other life-requiring substances (specifically water, carbon, nitrogen, and phosphorous) in an ecosystem.
15. Describe how the biosphere is changing, providing examples of the impact of humans on the biotic and abiotic environment.
16. Differentiate between different levels of threat on species extinction and provide examples of conservation efforts.
17. Differentiate between proximate and ultimate questions in behavioural ecology, explaining the importance of balancing costs and benefits.
18. Measure the genetic versus environmental components of a behaviour and explain the relevant importance of each component.
19. Identify plant structures and relate them to various processes occurring within plants.
20. Identify structures within specific animal organ systems and relate them to their functions within the organism.

Grading:

Assignments (3) 20% of mark

Start:	Due:
(1) May 24 (Tues)	(1) May 30 (Mon)
(2) June 27 (Mon)	(2) July 4 (Mon)
(3) July 25 (Mon)	(3) August 1 (Mon)

Midterm I

June 6

25% of mark

Midterm II	July 11	25% of mark
Final Exam	TBA	30% of mark

Note: a) Midterms are primarily composed of multiple-choice and (maybe) short answer questions.

b) Final Exam is comprehensive (covers all material taught during the semester).

Academic Expectations:

1. Recordings of all lectures will be made available to provide some flexibility.
2. Students are expected to watch all lectures and participate in all assignments.
3. Midterms and exam will be based on material covered in chapters indicated in the schedule, with a focus on material presented during lecture.
4. Scheduling conflicts for midterms must be brought to the instructor's attention as soon as possible, at least 2 weeks prior to the conflict time, so that alternative arrangements can be made. There should be no conflicts with the exam time.
5. If you are going to miss or cannot complete an assignment, email your course instructor ASAP so they can discuss alternative options. Any missed assignments will get a mark of 0. If you miss a midterm or exam, you must make arrangements with the course instructor for an alternate assessment (or student will receive an Incomplete grade). Any make-up midterms or exam may be composed of different question types (short answer versus multiple-choice) than the scheduled tests.
6. All posted final grades are unofficial and non-negotiable.

Tentative Timetable:

Dates	Topics	Chapters*
May	Introduction	1 (to 1.7 + 1.11)
	Evolution:	
	Evidence of Evolution	13 (to 13.7 + 13.11)
	Microevolution	9.2-9.3, 14 (to 14.10)
	Macroevolution	14 (14.11 – 14.14)
	Speciation	15 (to 15.11)
June	Classification	15 (after 15.11)
	Ecology:	
	Biosphere & Biomes	35
	Populations	37
	Communities & Symbiosis	38 + 39
	Ecosystems	40
July	Ecological Concerns & Conservation	41
(to end of semester)	Behavioural Ecology	36
	Organisms:	
subset of these	Plant: Types/Structures/Growth	19.3, 22.2/.3/.7/.8/
Chapters	Transport in Plants	23 (to 23.5)
(subject to time)	Animal: Structures/Integumentary System, Homeostasis	25 (to 25.15)

*Chapters align with the Biology: Concepts & Connections textbook

Plagiarism and Academic Dishonesty:

Students are expected to conduct themselves with integrity (see Senate Bylaw 31: Student Affairs and Integrity). This includes expectations that all students will follow the Windsor Student Code of Conduct:

Code: *“Students of the University of Windsor pursue all endeavours with honour and integrity, and will not tolerate or engage in academic or personal dishonesty”*

Pledge: *“As a student of the University of Windsor, I pledge to pursue all endeavours with honour and integrity, and will not tolerate or engage in academic or personal dishonesty”*

Description: As defined in the Windsor Student Code of Conduct and Senate Bylaw 31 on Academic Integrity, this pledge covers but is not limited to cheating, plagiarizing or misrepresenting the ideas of someone else, unauthorized assistance/collaboration, and falsifying data.

Therefore, plagiarism and other forms of Academic Dishonesty will not be tolerated and all instances will be reported to the Associate Dean of Science for disciplinary action (see Senate Bylaw 31, sections relating to Misconduct). Since tests/exams in this course are protected by copyright, reproduction or dissemination of their contents or format is strictly prohibited. Students who violate this rule or engage in any other form of academic dishonesty will be subject to disciplinary action. Further information is available through the Office of Academic Integrity (uwindsor.ca/aio).

All assessments, including grading, for this course will abide to the University of Windsor Academic Evaluation Procedures (Senate Bylaw 51). Other information relating to this bylaw, such as the Student Code of Conduct and the Conduct of Exams and Tests policies, can be found online at

http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/student_code_of_conduct_march_13_2015.pdf

and

http://www.uwindsor.ca/registrar/sites/uwindsor.ca.registrar/files/summer-exam-slots_0.pdf respectively.