University of Windsor

Department of Integrative Biology
Faculty of Science

BIOL1013 Organisms and the Environment

Course Outline for Winter 2022

Instructor: Dr. Julie Smit
Email: through Course Blackboard Website

Lectures: 4:00 – 4:50 pm Tuesdays and Thursdays
Synchronous lectures on Blackboard Collaborate (Virtual Classroom)

Office Hours: Mondays ***(Email)*** & Wednesdays ***(Virtual Classroom)*** 2:00 – 3:00 pm
or by Appointment

Course Graduate Teaching Assistant:
Jeffrey Yung
(office hours: ***Fridays 10:00 – 11:00 am in Virtual Classroom***)
or Email through Blackboard Website *(Lead Teaching Assistants)*

Course Website: Blackboard

Materials:

Required text:

Taylor, MR, EJ Simon, JL Dickey, KA Hogan. 2020. Biology: Concepts & Connections. 10th Edition. Pearson Inc.

Available at the bookstore as an electronic textbook:

Campbell Biology – Modified Mastering Etext at a cost of $98.74

Information for accessing the e-text can be found on the Resources content area of the Blackboard site.

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. 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.

Course 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 structures within specific animal organ systems and relate them to their functions within the organism.
20. Briefly describe how vaccines work against viral infections.

Grading: (based on information as of Jan 05 2022)

Activities - includes in-class and out-of-class activities/assignments		20**%** of mark
Midterm I	February 10	23% of mark
Midterm II	March 17	27% of mark
Final Exam	TBA	30% of mark

Note: a) Midterms are primarily composed of multiple-choice and short answer questions.
b) Final Exam is comprehensive (covers all material taught during the semester).

Academic Expectations:

1. Online lectures will be provided during scheduled times using the Virtual Classroom on Blackboard. Students are expected to attend lectures and participate in both in-class and out-of-class activities.
2. Recordings of lectures will be made available to provide some flexibility.
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 unable to complete an assessment due to illness, the University has an official policy for how to report illness during the Winter 2022 semester: Go to http://ask.uwindsor.ca/app/answers/detail/a_id/577 to complete and submit a "Report an Illness". No documentation is required but please note that it is an academic offense to report a sickness if you are not, in fact, sick. 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*
January	**Introduction**	1.1 - 1.4, 1.8 - 1.10, 1.12-1.14
	Evolution:	
	Evidence of Evolution	13.1 - 13.7
February	Microevolution	13.8 - 13.18 (& 9.3-9.4)
	Macroevolution	15.7 - 15.13
	Speciation	14.1 - 14.11
	Classification	15.14 - 15.19
	Ecology:	
March	Biosphere & Biomes	34
	Population Ecology	36
	Community Ecology	37.1 – 37.13
	Ecosystem Ecology	37.14 – 37.23
April	Ecological Concerns & Conservation	38
	Behavioural Ecology	35
	Organisms:	
	Animal: Structures/Integumentary System, Homeostasis	20
	Viruses (& Vaccines)	slides

*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.

Student Evaluation of Teaching:

The Student Evaluation of Teaching (SET) will be administered at the end of the semester.