

FORM AND FUNCTION OF ORGANISMS (BIOL 225; Section 02); WINTER 2022

1. General Information

Class date, time: Wednesday & Friday, 8:45-10:00; Location: SP S110 LOY
 Instructor: Dr. Catherine Calogeropoulos, Biology Department, Faculty of Arts and Science
 (catherine.calogeropoulos@concordia.ca)
 Prerequisite: CEGEP Biology 301 or 101-NYA or BIOL 201.
 Office hours: Fridays 12:00pm-1:00pm.
 Note: Email may only be used to set up an appointment outside of office hours.

2. Course description

Welcome to Biology 225. This course provides an overview of basic physiological and morphological aspects of plants and animals that allow survival and reproduction. The section on animals will begin with an exploration of some of the evolutionary processes that led to today's extant animal phyla and animal architecture. Our in-depth coverage of animal form and function will cover all organ systems in considerable detail. The section on plants will also begin with a description of the evolutionary processes that led to today's extant plant taxa. Once the evolutionary landscape of the plant kingdom is established, we will proceed onto plant form and function. By the end of this section you will know how plants are able to grow, acquire and transport nutrients, reproduce and respond to stimuli.

3. Course Learning Outcomes

Animal Form and Function

1. **List** the organs of organ systems
2. **Recognize** how form leads to function
3. **Compare** organ systems of animals from different phyla
4. **Extrapolate** from basic principles (physical laws; osmotic pressures; etc.) to the functioning of organs.

Plant Form and Function

1. **Describe** plant structure and the transport of nutrients.
2. **Relate** plant growth to resource acquisition
3. **Describe** the soil microbiome and **explain** its importance to plant growth and reproduction
4. **Discuss** how plant responses to stimuli affect resource acquisition and reproduction

3. Tentative Schedule:

Class Dates	Lecture Topics	Chapters
Jan. 7	Introduction to the course	
Jan. 12	An overview of animal diversity	32
Jan. 14	Basic principles of animal form and function	40
Jan. 19	Animal nutrition	41
Jan. 21	Circulation	42
Jan. 26	Gas exchange	42
Jan. 28	The immune system	43
Feb. 02	Osmoregulation and excretion	44
Feb. 04	Hormones and the endocrine system	45
Feb. 09	Animal reproduction	46
Feb. 11	Neurons, synapses and signalling	48
Feb. 16	Sensory and motor mechanisms	50
Feb. 18	Review	
Feb. 23	Study/Review	

Feb. 25	Midterm 1	
MIDTERM BREAK FEBRUARY 28–MARCH 06		
March 09	An overview of the plant kingdom	29
March 11	Plant structure growth and development	35
March 16	Resource acquisition and transport in vascular plants	36
March 18	Soil and plant nutrition	37
March 23	Angiosperm reproduction and biotechnology	38
March 25	Plant responses to their environments	various
March 30	Plant responses to internal and external signals	39
April 01	Review	
April 06	Midterm 2	
April 08	Study/Review	
April 13	Study/Review	

4. Course material

Text Book: Campbell Biology, 3rd Canadian edition
 ISBN: 9780135309414
 Author: Reece et al.
 Publisher: Pearson

5: Grading:

Midterm #1 (FEBRUARY 25) 20%
 Midterm #2 (APRIL 06) 20%
 Final Exam (**CUMULATIVE**) 60%

6. Grading System (Undergraduate calendar 16.3)

	Grade	Marks	Grade Points		Grade	Marks	Grade Points		Grade	Marks	Grade Points		Grade	Marks	Grade Points
	A+	90-100	4.30		Very Good	B+	77-79.9		3.30	Satisfactory	C+		67-69.9	2.30	Marginal Pass
	A	85-89.9	4.00		B	73-76.9	3.00		C	63-66.9	2.00		D	53-56.9	1.00
	A-	80-84.9	3.70		B-	70-72.9	2.70		C-	60-62.9	1.70		D-	50-52.9	0.70
F		< 49.9	0		Poor - Failure										

7. Rights and Responsibilities:

<http://provost.concordia.ca/academicintegrity/plagiarism/>

8. Disclaimer:

"In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change".

9. Concordia University services to help students achieve academic success:

Academic advisor in biology: Dr. Ian Ferguson. Make an appointment by contacting Ms. Leonie Morris at (514) 848-2424 x3400 or leonie.morris@concordia.ca.

Concordia Counselling and Development offers career services, psychological services, student learning services, etc.:

<http://cdev.concordia.ca/>

The Concordia Library Citation and Style Guides: <http://library.concordia.ca/help/howto/citations.html>

Advocacy and Support Services: <http://supportservices.concordia.ca/>

Student Transition Centre: <http://stc.concordia.ca/>

New Student Program: <http://newstudent.concordia.ca/>

Access Centre for Students with Disabilities: <http://supportservices.concordia.ca/disabilities>

Student Success Centre: <http://studentsuccess.concordia.ca/>
Academic Integrity: <http://provost.concordia.ca/academicintegrity/>
Financial Aid and Awards: <http://web2.concordia.ca/financialaid/>
Health Services: <http://www-health.concordia.ca>