

This syllabus is a general representation of the course as previously offered and is subject to change.

BIOL 260 – Fundamentals of Physiology

General Course Syllabus (as of July 2019)

About the Course:

Course Description: This course focuses on the principles of cellular and organismal physiology illustrated with examples from vascular plants and vertebrates. The goal of the course is to help students develop the skills needed to use physiological reasoning to address important questions about how plants and animals function.

The course is designed around three major topics: (1) energy and nutrient acquisition, (2) transport of materials, and (3) sensing and responding to the environment.

Course Format: Lecture

Credits: 3

Pre-requisites: Either:

- (a) all of BIOL 112, BIOL 121 or
- (b) SCIE 001 or
- (c) 8 transfer credits of 1st year BIOL and 6 credits of 1st year chemistry.

Course Learning Objectives:

By the end of this course students should be able to:

- Clearly **explain** multi-step physiological processes.
- Use physiological reasoning to **predict** the response of an organism to a change in their environment.
- **Interpret** graphs of data about physiological processes and **explain** the observed patterns.

Textbooks and Additional Resources:

Textbook: required

Students are required to have access to a textbook, as it will be needed for the pre-reading assignments. This course uses a custom textbook that includes chapters from two different introductory biology textbooks (Campbell “Biology” and Freeman et al. Biological Science) that is available at the UBC bookstore. Students can also use previous versions or the complete set of Freeman, but page numbers for other editions will not be provided.

iClicker: required

Evaluation:

Sample grading scheme from 2018W2:

Assessment	Weight
Pre-reading and quiz	5%
Clicker questions (participation grade)	5%
Homework questions	5%
Midterm 1	25%
Midterm 2	25%
Final	35%

The course is structured around weekly modules addressing key topics for either animals or plants.

- Each week, students are expected to read a section from the textbook or other resources and complete a short **pre-reading quiz** before coming to class.
- The **lecture notes** for each week will be available before class.
- In class there will be a combination of lectures with **clicker questions** and other active learning exercises.
- At the end of each week, there will be a **homework question** in the form of a sample exam question to help students solidify their learning.
- Within each module there will also be links to relevant study resources (including sample exam questions, study guides, helpful videos or other web content).

Exams are closed book. All questions are short answer (generally requiring one or two paragraphs to answer). Answers can be in point form, and may include diagrams. One page of notes (8 ½ x 11in), handwritten or typed is allowed.

Exam Policies: There are no make-up exams for this course. If you do better on the final exam than on any midterm, the midterm grade or grades will be dropped. (You will be given the best possible combination of grades. The final always counts).

Schedule of Topics:

Sample schedule from 2018W2:

Week	Topic
1	Introduction – Major themes and Modules
2	Nutrition in Animals I & II
3	Nutrition in Plants – Light Harvesting Nutrition in Plants – Carbon fixation
4	Nutrition in Plants – Mineral Requirements Nutrition in Plants – Mineral Transport
5	Transport in Animals – Ventilation Transport in Animals – Circulation
6	Transport in Plants – Water Transport in Plants – Sugars
7	Review Midterm I
8	Introduction – Responses to the environment in animals Neurons I – The membrane potential
9	Neurons II – The action potential Integrated function of nervous systems
10	Plant responses to the environment – Light responses
11	Plant responses to the environment – Hormones II Midterm 2
12	Climate change as an environmental stressor Climate change and plants
13	Climate change and animals Course review and exam preparation

University Policies:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.

UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.

UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).