

Course Outline

Course Overview

Welcome to **BIOM*3200DE** Mammalian Physiology! Mammalian physiology is the study of function in mammals. The cells, organs, and organ systems of the mammalian body must communicate and work together for normal function. This course will focus primarily on the physiology of the body's organs and organ systems, while at the same time providing an understanding of how the mammalian body is organized.

Physiology is closely linked with anatomy due to the interdependence of structure and function. Thus, it is important as you progress through the units to keep in mind the course focus is physiology, but a certain amount of anatomy is critical for a proper understanding of function. Thus, you will be examined not only on the physiology of structures but also on the anatomy of these structures. Emphasis will be placed on this structural and functional relationship, and physiological adaptations will be highlighted. Some alterations in form and function in mammals are quite evident. For example, the human pelvis has a unique anatomy, which ultimately allows bipedalism. Other examples include adaptations of the ruminant digestive tract or the alterations to the renal physiology of desert mammals.

The course begins with an examination of the systems involved with maintaining homeostasis. Homeostasis is the tendency toward a stable internal environment. All animals are faced with changing internal and external conditions and must employ homeostatic control mechanisms to counteract these changing conditions. The fast-acting nervous system and the slower-acting endocrine system are the first physiological systems examined in the course and you will see that the coordinated efforts of these two systems are imperative for the maintenance of a stable internal environment.

Reproduction is the next unit you will cover due to its close links with the endocrine system. The remaining units in the course examine the form and function of other organ systems including the cardiovascular, immune, respiratory, renal, and digestive systems. Although these biological systems are provided in a logical order, it is important to remember that the organism is a sum of all the organ systems presented. Therefore, each unit in the course builds on information presented in an earlier unit.

Time Commitment and Workload

A lot of information is presented in this course. You are responsible for 1.0 credits worth of information presented over one semester.

It is recommended that you spend an average of 9 hours/week (minimum) to learn and review the material, in addition to completing the online assignments. Due to the volume of information presented, the course will focus on human or primate anatomy and

physiology (the recommended text book is human- based), and highlight key examples where mammalian organs and organ systems are adapted to specific environmental niches (see objective 3).

Course Goals and Objectives

Goals

This course will utilize a comparative approach to highlight normal mammalian physiology.

The main goal of this course is to provide students with a strong working knowledge of basic physiological principles that will provide the framework for further physiology courses provided within the D department of Biomedical Sciences and beyond.

Objectives

Upon successful completion of this course you should be able to:

- Describe and understand mammalian physiological principles.
- Explain how each body system functions, interacts, and integrates with other body systems to achieve homeostasis and normal body function.
- Describe the anatomical components of each physiological system and relate physiological function to anatomical form throughout all units covered in this course.
- Identify and describe, using a comparative approach, key physiological adaptations to understand the basis for these adaptations.
- Describe and predict how external stimuli, such as medical or physical trauma, lead to alterations in homeostasis and/or changes in the physiological functioning of body systems, and how homeostatic balance is restored.

Required Resources

Textbook(s)

Fox, Stuart Ira. "Human Physiology" 13th edition. McGraw-Hill Higher Education. 2013.

Textbooks can be purchased at the [University of Guelph Bookstore](#) or the [Guelph Campus Co-op Bookstore](#).

Students are welcome to use the 12th edition of the textbook, and page references for this edition will be provided.

Technical Requirements

See the **Resources** link in the top navigation for a link to the basic Technical Requirements for this course.

Course Structure

The concepts of this course are presented in 12 online units. These units will help guide you in pacing yourself through the course materials. You will note that each unit has a section called checklist and one called extra support. The checklist provides a list of key concepts and is a way for you to check your knowledge, and then go back and review concepts you may need more work on. It can be a great study aid as it lists everything you need to know for a particular unit. The extra support section provides links to articles, videos, animations and additional resources. The material in this section is optional and will not be included on any of the quizzes, midterms or the final exam. The units are as follows

- UNIT 01: Homeostasis & Neurophysiology
- UNIT 02: Synaptic Transmission & Muscle Physiology
- UNIT 03: The Nervous System
- UNIT 04: Endocrinology I
- UNIT 05: Endocrinology II
- UNIT 06: Reproduction
- UNIT 07: Blood & Immunity
- UNIT 08: Cardiovascular I
- UNIT 09: Cardiovascular II
- UNIT 10: Respiratory System
- UNIT 11: Renal Physiology
- UNIT 12: Digestive Physiology

Note: It is strongly recommended that you follow the course **Schedule** (see **Schedule** link located in the top navigation bar). The **Schedule** outlines what you should be working on during each week of the course. By following the **Schedule**, you will be better prepared to complete course assignments and will be able to participate more effectively in the online discussions. Also note each of the 12 units are not of equal length.

Method of Instruction and Evaluation

Examinations will consist of multiple-choice (MC) and short answer (SA) questions to test students' knowledge of physiology. Multiple-choice questions will also constitute

eight **online quizzes** that will compose 20% of your overall mark. One SA question will be included on quizzes 3 & 6 to provide feedback on answering this type of question before the final exam. The online quiz format is similar to that of the midterm and final exam. The quizzes are designed to help you stay on schedule with the assigned material.

Please check the **Assignments** link for specific assignment guidelines, and policies related to assignment submission. For specific assignment due dates see the **Schedule** link.

Assignment	Value
Quizzes (8 x 2.5%)	20%
Midterm I	20%
Midterm II	20%
Final Exam	40%
Total	100%

Grading

In general your marks will be based on the University of Guelph undergraduate grading breakdown, as follows:

- **80 - 100 (A) Excellent.** An outstanding performance in which the student demonstrates a superior grasp of the subject matter, and an ability to go beyond the given material in a critical and constructive manner. The student demonstrates a high degree of creative and/or logical thinking, a superior ability to organize, to analyze, and to integrate ideas, and a thorough familiarity with the appropriate literature and techniques
- **70 - 79 (B) Good.** A more than adequate performance in which the student demonstrates a thorough grasp of the subject matter, and an ability to organize and examine the material in a critical and constructive manner. The student demonstrates a good understanding of the relevant issues and a familiarity with the appropriate literature and techniques.
- **60 - 69 (C) Acceptable.** An adequate performance in which the student demonstrates a generally adequate grasp of the subject matter and a moderate ability to examine the material in a critical and constructive manner. The student displays an adequate understanding of the relevant issues, and a general familiarity with the appropriate literature and techniques.

- **50 - 59 (D) Minimally Acceptable.** A barely adequate performance in which the student demonstrates a familiarity with the subject matter, but whose attempts to examine the material in a critical and constructive manner are only partially successful. The student displays some understanding of the relevant issues, and some familiarity with the appropriate literature and techniques.
- **0 - 49 (F) Fail.** An inadequate performance.

* For specific grading criteria, review the expectations for each assignment under the **Assignments** link, located in the top navigation of the website.

Getting your Grades

Unofficial assignment marks will be available in the **Grades** section of the course website. Feedback on assignments will be returned online via the **Grades** link, located in the top navigation bar of the course website.

How to be Successful

To successfully complete this course it is recommended that you:

- Start by navigating through all the course components to become comfortable with the organization of the course and familiar with the course expectations. A good place to begin is here with the course **Outline**. You also need to visit the **Schedule** (where you will find a timeline for the course along with due dates). The **Units** guide you for each of the 12 weeks of the course. The **Resources** section of the course website has useful information and links to the library. If you have any questions you can ask them in the **Assignment & Course Questions** discussions area.
- Log on to the course website frequently to keep up on course developments. You are responsible for attending to all announcements, assignments and course material distributed online. Please check regularly for important messages from the instructor in the **News** section on the **Course Home** page and the **Assignment & Course Questions** discussions area.
- Your course website acts as your classroom. Every student is of course different, but you should plan on spending an average of 10-12 hours per week on this course. Scheduling your time wisely in an online course is very crucial. Since we do not meet at a scheduled time every week, it is up to you to make sure you are logging in regularly. You will need to visit the course website a minimum of 3-5 times per week to find out what to do, get help and talk to your instructor and your classmates.
- Manage your time well. Plan to set aside time each week to complete all unit activities, assignments and readings. Use the **Schedule** to chart out your workload and timelines for completion.
- Read through all the unit and textbook readings, learning activities and assignments prior to beginning each unit.

- Stay active and in touch with your instructor and classmates by participating in all discussions.
- Complete and submit all assignments according to the due dates listed on the course **Schedule**.

Your Instructor



My name is Nicole Campbell and I will be your instructor for Mammalian Physiology this semester. I graduated from the University of Guelph with my Bachelor's of Science and Doctorate in Biomedical Sciences. I have had numerous physiology teaching experiences at Guelph and have also been an instructor at the University of Ontario. These experiences include classroom lecturer and online education. I hope you enjoy this course and please do not hesitate to contact me with any questions or concerns.

Policies and Resources

Distance Education and Open Learning Program Handbooks

Degree Credit Students:

Please ensure that you have reviewed the [DE Handbook](#). In particular, ensure that you review the sections that pertain to Assignment Submissions and Returns, Online Quizzes or Tests and Final Examinations.

Open Learning Program Students:

Please ensure that you have reviewed the [Open Learning program Handbook](#) for the specific procedures and policies related to your studies through Open Learning and Educational Support.

Email Communication

Degree Credit Students:

As per university regulations, all students are required to check their uoguelph.ca e-mail account regularly: e-mail is the official route of communication between the University and its students.

Open Learning Program Students *without* a University of Guelph email account:

Check your email account (the account you provided upon registration) regularly for important communications, as this is the primary conduit by which the Open Learning and Educational Support will notify you of events, deadlines, announcements or any other official information.

When You Cannot Meet Course Requirements

Degree Credit Students:

When you find yourself unable to meet an in-course requirement due to illness or compassionate reasons, please advise your course instructor **in writing**, with your name, ID number and email contact. See the [Undergraduate Calendar](#) for information on regulations and procedures for Academic Consideration.

Open Learning Program Students:

Please refer to the [Open Learning program Handbook](#).

Drop Date

Degree Credit Students:

The last date to drop one-semester courses, without academic penalty, is indicated in the **Schedule** section of this course website. [See the Undergraduate Calendar for regulations and procedures for Dropping Courses.](#)

Open Learning Program Students:

Please refer to the [Open Learning program Handbook](#).

Copies of Assignments

Keep paper and/or other reliable back-up copies of all assignments: you may be asked to resubmit work at any time.

Accessibility

Degree Credit Students:

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible. For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: [Centre for Students with Disabilities](#).

Open Learning Program Students:

Students with disabilities requiring special accommodation for tests during the semester or for final exams shall contact the Open Learning and Educational Support Program Counsellor at counsellor@OpenEd.uoguelph.ca, before the end of the first week of classes to ensure that appropriate support can be arranged. If contact is not made by this time, support may be delayed. Students will be asked to provide documentation from a health professional or from their home institution. Please note all information provided is held in confidence.

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need

to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

Acceptable Use

The University of Guelph has an [Acceptable Use Policy](#), which you are expected to adhere to.

Resources

Degree Credit Students:

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate, graduate and diploma programs. [See Academic Calendars.](#)

Open Learning Program Students:

The [Open Learning program Handbook](#) is the source for information about policies and regulations.

Contact Information

Contact your Instructor

Name: Nicole Campbell, PhD ☐ Email: ncampb09@uoguelph.ca

Teaching Assistant

Name: Diane Gibbard, MSc candidate ☐ Email: dgibbard@uoguelph.ca

Name: Carolyn Parratt, PhD candidate ☐ Email: cparratt@uoguelph.ca

Technical Support

If you have any questions regarding the technical requirements of this course or about access to your course website please contact: **Open Learning and Education Support Technical Help Desk** Email: help@OpenEd.uoguelph.ca Tel: (519) 824-4120 ext. 56939 Toll Free (Canada & USA only): 1-866-275-1478 Fax: (519) 824-1112 Office: Day Hall, Room 211

Help Desk Hours of Operation Monday – Friday: 8:30 a.m. – 8:30 p.m. Saturday: 10:00 a.m. – 4:00p.m. Sunday: 12 noon – 12:00 midnight (All times are Eastern)

General Inquiries

If you have any general questions about your course or about online learning, please contact our main office:

Open Learning and Educational Support University of Guelph Johnston Hall, Room 160 Email: info@OpenEd.uoguelph.ca Tel: 519-767-5000