



BIOM*3200 Biomedical Physiology

Winter 2020

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 1.00

Version 1.00 - October 31, 2019

1 Course Details

1.1 Calendar Description

This course focuses on the normal functioning of mammals. The physiology of the nervous, muscular, endocrine, reproductive, cardiovascular and digestive systems and homeostasis as reflected in respiratory and renal function is treated in a detailed manner. The integrative nature of various physiological systems is highlighted and cellular and molecular information is incorporated to enhance the understanding of these systems. Aspects of medically significant changes in the mammalian physiological systems are also introduced.

Pre-Requisites:

BIOC*2580

Restrictions:

HK*3810. This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.

1.2 Course Description

This course focuses on human physiology, its application to human medicine, and includes some comparative aspects to other animals.

1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

2 Instructional Support

2.1 Instructional Support Team

Course Co-ordinator: Danyelle Liddle Msc
Email: dliddle@uoguelph.ca
Telephone: 519-386-4965
Office Hours: Coordinator and Lecturer

3 Learning Resources

3.1 Required Resources

Fox's Human Physiology (Textbook)

4 Learning Outcomes

5 Teaching and Learning Activities

Lecture Time: Jan. to April, Tuesdays and Thursdays, 10:00-11:30 a.m.

Location: ROZ

Human Physiology and Biomedical Applications:

Endocrine System:

Renal System:

Cardiovascular , Respiratory, and Muscle Systems:

Reproductive System:

Blood & Immune System:

Nervous System:

Digestive System:

Comparative Physiology

Critical thinking and clinical relevance

5.1 Lecture

Topics:

Human Physiology:

Endocrine Principles

Hormones and Receptors

Pituitary Gland

Comparative Mammalian physiology

Topics:

Human Endocrinology:

Hypothalamic control

Adrenal axis

Thyroid

Critical thinking, clinical relevance

Topics:

Human Growth Physiology:

Calcium balance

Growth Control

Critical thinking, clinical relevance

Topics:

Human Reproductive Physiology:

Male Endocrine System

Female Endocrine System

Critical thinking, clinical relevance

Topics:

Gametogenesis

Human Pregnancy, Early embryo development

Comparative mammalian physiology

Critical thinking, clinical relevance

Topics:

Human Female/Male Reproductive systems

Sex determination and differentiation

Critical thinking, clinical relevance

Topics:

Human Reproduction:

Partuition, postpartum, lactation

Topics:

Human Renal Physiology Pt.1:

Electrolyte and water balance

Anatomy of the kidney

Microanatomy of the kidney, filtration

Comparative mammalian physiology

Critical thinking, clinical relevance

Topics:

Human Renal Physiology, Part 2.

Renal regulation: the nephron, glomerular filtration

Tubular reabsorption, secretion

Regulation of acid-base balance

Critical thinking, clinical relevance

Topics:

Human Cardiovascular physiology

Blood vessels: structure, hemodynamics

Blood Flow

Regulation of peripheral resistance

Critical thinking, clinical relevance

Topics:

Cardio-respiratory system

Cardiac Anatomy

Cardiac contraction (cellular)

Muscle physiology

Heart Disease

Topics: Human Blood: constituents and functions of plasma

Critical thinking, clinical relevance

Topics: Human Cellular Immunology

Critical thinking, clinical relevance

Topics: Human blood physiology
Platelets and blood coagulation
Critical thinking, clinical relevance

Topics: Introduction to human neurophysiology

Cellular Physiology

Autonomic Nervous system

Critical thinking, clinical relevance

Topics: Basic neurophysiology

Cell membrane and transport

Membrane resting and action potentials

Action potential conduction

Critical thinking, relevance to human and animal diseases

Topics: Human Physiology

Central Nervous system

Critical thinking and relevance to mammalian diseases

Topics: Human Gastrointestinal Physiology

Structure and Function

Critical thinking, relevance to clinical conditions

Topics: Human Gastrointestinal Physiology

Digestion and Absorption

Role of accessory organs

Critical thinking and applications to human life

6 Assessments

6.1 Assessment Details

Term Test #1 (30%)

Term Test #2 (30%)

Online Quizzes (5%)

Only the best 6/8 count toward mark.

Final Exam (35%)

All sections are on the FINAL EXAM (2 HOURS), which covers all material on the Endocrine, Renal, Reproductive, Cardiovascular, Immune, Cardiovascular, Nervous, and Digestive Systems. However greater emphasis will be on the sections that have not yet been tested in class.

7 University Statements

7.1 Email Communication

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

7.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

7.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

7.4 Copies of Out-of-class Assignments

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

7.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

7.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

7.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

7.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>
