



VETM*3080 Veterinary Physiology and Biochemistry

Fall 2020
Section(s): C01

Department of Biomedical Sciences
Credit Weight: 2.00
Version 1.00 - September 07, 2020

1 Course Details

1.1 Calendar Description

The course describes the physiological processes carried out by the major tissues and organ systems, and the regulatory mechanisms that affect tissue and organ function. Topics dealt with in the course include the following: the cellular and chemical constituents of blood, blood coagulation and haemostasis, the function of the immune system, resistance to infectious agents and the principles of immunoprophylaxis, cardiac function, cardiovascular haemodynamics, blood pressure, peripheral and regional circulation of blood, the lymph circulation, the structure and function of the mammalian nervous system and organs associated with special senses, the functions of the digestive tract, lungs and kidney thermoregulation and water, electrolyte and acid-base balance. The homeostatic features and species variation of the tissue organ systems will be emphasized.

Co-Requisites: All Phase 1 courses.

1.2 Course Description

The course is also designed to promote a broad understanding of the basis for the biochemical tests that are used to evaluate physiological processes. After introducing the concepts of homeostasis, enzymology and circulating biochemical markers which are relevant to all systems, the course is presented in individual modules or learning blocks. For these sections, specific organ systems are presented, the relevant functional principles and biochemical tests are presented and the material is integrated through presentations of case material. Case examples presented in lectures and tutorials will highlight the use of normal values and biochemical abnormalities that develop when normal organ function is compromised.

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

Instructor: Jonathan LaMarre
Email: jlamarre@uoguelph.ca
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Office: OVC 3606
 Nervous System, Hematology, Renal Physiology, Acid Base Physiology, Respiratory Physiology

Instructor: Tarek Saleh
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 Cardiovascular System

Instructor: Pawel Bartlewski
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Telephone: +1-519-824-4120 x53330
Office: OVMX 1677
 Endocrine System

Instructor: Brad Hanna
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Telephone: +1-519-824-4120 x54534
Office: OVC 1646D
 Digestive system

Instructor: Pathobiology Sessional Instructor
Office Hours: Instructor to be appointed during the F20 Semester
 Immunology

Course Co-ordinator: Jonathan LaMarre
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3 Learning Resources

3.1 Required Resources

Cunningham, J.G. (Ed), Textbook of Veterinary Physiology, 5th Edition (W.B. Saunders). (Textbook)

3.2 Recommended Resources

Guyton's Textbook of Medical Physiology, 13th Edition (W.B. Saunders) (Textbook)

Tizard, I. Veterinary Immunology, 9th edition (W.B. Saunders). (Textbook)

Lorenz, M.D. and Kornegay, J.N., Handbook of Veterinary Neurology, 4th edition (W.B. Saunders) (Textbook)

3.3 Additional Resources

Course Notes (Notes)

Course notes will be available at the course website in Courselink. Printed versions of the notes will not be provided.

Clinical Chemistry of Domestic Animals, 5th edition. Edited by JJ Kaneko, JW Harvey and ML Bruss (Readings)

4 Learning Outcomes

The primary objective of this course is to understand the physiological processes mediated by the different tissues and organ systems, the intrinsic and extrinsic mechanisms and factors that control their function and the changes that occur in specific measurable parameters when these systems are compromised. In order to understand the changes in function that underlie disease, one must understand normal function and how it is reflected in certain biochemical tests. During this course, frequent reference will be made to disorders and disease states, the biochemical basis behind such disorders, how they affect normal physiology and how they are assessed.

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Explain homeostasis and how it applies to whole-animal physiology and each system studied.
2. Demonstrate knowledge and understanding of the function each normal organ system as applicable to veterinary medicine.
3. Demonstrate an understanding of the basis of enzymology and serum markers of organ function and physiology and explain specifically how these are useful diagnostic and prognostic aids in the management of disease.
4. Demonstrate knowledge of how multiple organs/systems participate in protein, carbohydrate and lipid metabolism.
5. Integrate the knowledge in different sections of the course with relevant material from

other courses and begin to apply this knowledge to clinical and pathophysiological problems.

5 Teaching and Learning Activities

6 Assessments

3 midterm examinations and 1 final examination comprise the evaluation for the course, as outlined below. The format is multiple choice, with specific case scenarios similar (not identical) to those presented in the tutorials forming the basis for approximately 20% of the questions. For Academic Consideration, please contact the Associate Dean, Students and Academic (ovc.dvmacademics@uoguelph.ca).

6.1 Assessment Details

Midterms (65%)

1. Nervous System, Hematology (25%)
2. Renal, Acid Base, Respiratory, Serum Biochemistry, Urinalysis (25%)
3. Cardiovascular, Endocrinology (15%)

Final Examination (35%)

Examination covers **entire** course. 25% of the questions will be from the Digestive Section, 50% of the questions will be from the Immunology Section. The remaining 25% of questions will be derived from the other course sections (Neurophysiology, Hematology, Renal, Acid Base, Respiratory, Cardiovascular, Endocrine) in approximate proportion to the number of lectures in those sections.

7 Course Statements

7.1 Statement on Session Recordings:

By enrolling in a course, unless explicitly stated and brought forward to their instructor, it is assumed that students agree to the possibility of being recorded during lecture, seminar or other "live" course activities, whether delivery is in-class or online/remote.

If a student prefers not to be distinguishable during a recording, they may:

1. turn off their camera
2. mute their microphone
3. edit their name (e.g., initials only) upon entry to each session
4. use the chat function to pose questions

Students who express to their instructor that they, or a reference to their name or person, do not wish to be recorded may discuss possible alternatives or accommodations with their instructor.

7.2 Netiquette Statement Regarding Online Behaviour:

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz or completing a quiz for/with another student
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your user name and password
- Recording lectures without the permission of the instructor

8 University Statements

8.1 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.

8.2 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>

8.3 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>

8.4 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.

8.5 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>

8.6 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>

8.7 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.

8.8 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>

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

8.10 Illness

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.
