



VETM*3080 Veterinary Physiology and Biochemistry

Fall 2018

Section(s): C01

Department of Pathobiology

Credit Weight: 2.00

Version 2.00 - August 22, 2018

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-Requisite(s): 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 Instructor(s)

Jonathan LaMarre

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Hematology, Neurophysiology, Renal Physiology, Respiratory Physiology, Acid Base Physiology

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Immunology

2.2 Instructional Support Team

Course Co-ordinator: Jonathan LaMarre
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3 Learning Resources

3.1 Recommended Resource(s)

CUNNINGHAM, J.G. (ED), TEXTBOOK OF VETERINARY PHYSIOLOGY, 5TH EDITION (W.B.

SAUNDERS). (TEXTBOOK) (Textbook)

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

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

Tizard, I. Veterinary Immunology, 10th edition (W.B. Saunders). (Textbook)

3.2 Additional Resource(s)

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.
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5 Teaching and Learning Activities

6 Assessments

3 midterm exams and 2 final exams comprise the evaluation for the course, as outlined below.

6.1 Assessment Details

Midterms (40%)

1. Nervous System, Hematology (15%)
2. Renal, Acid Base, Respiratory, Serum Biochemistry, Urinalysis (15%)
3. Cardiovascular, Endocrinology (10%)

Combined Final Exams (60%)

First Exam is Physiology and Biochemistry only. Second Combined Exam includes material from Anatomy, Biochemistry, Histology, and Physiology. Only the Physiology and Biochemistry questions count towards final grade in this course.

Combined Exam 1 Questions: Material from Digestive and Immunology sections (Worth 35% of final grade)

Combined Exam 2 Questions: Material from previously-tested sections in the course (Worth 25% of final grade)

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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

7.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

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.

More information: www.uoguelph.ca/sas

7.6 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.

7.7 Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate 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 which apply to undergraduate, graduate and diploma programs.
