



ANSC*3080 Agricultural Animal Physiology

Fall 2017

Sections(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - September 07, 2017

1 Course Details

1.1 Calendar Description

This course is an introduction to the physiology of domesticated farm animals. The course will emphasize homeostatic control of the major body systems. The lectures cover the nervous, cardiovascular, respiratory, urinary, immune, endocrine and reproductive systems. The lectures and laboratories are closely integrated.

Pre-Requisite(s): BIOC*2580 or EQN*2040

Restriction(s): Registration in BSC(Agr), BSC.ABIO or BBRM.EQM, Minor in Agriculture.

1.2 Timetable

Lectures: Monday, Wednesday, Friday at 08:30 a.m. - 09:20 a.m. in THRN, Room 1200

Laboratories: Monday, Tuesday or Thursday at 2:30 p.m. – 3:50 p.m. or 4:00 p.m. – 5:20 p.m. depending on section; in ANNU (Animal Science & Nutrition Building) Room 110.

1.3 Final Exam

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

2 Instructional Support

Teaching Strategies:

Lectures – The lectures will present an overview of each topic with examples of applications. Problems will be used to illustrate the importance of the physiological principle under discussion. Opportunity for questions and discussion will be provided.

Laboratory/tutorial sessions – A more complete description of these sessions will be provided in a separate handout to be distributed during the first lab period. The laboratory sessions will provide students with an opportunity to integrate knowledge of physiological principles to an understanding of system function within the whole animal, and to apply these principles to problem-solving and case discussion exercises.

2.1 Instructor(s)

Gregoy Bedecarrats

Email: gbedecar@uoguelph.ca

Telephone: +1-519-824-4120 x53692

Office: ANNU 223

Office Hours: Monday, Wednesday, Friday - 09:30AM - 10:30AM

2.2 Instructional Support Team

Lab Co-ordinator: Julie Kim

Email: jungmi@uoguelph.ca

Telephone: +1-519-824-4120 x56477

Office: ANNU 254

2.3 Teaching Assistant(s)

Name	Details
Charlene Hanlon	chanlon@uoguelph.ca ANNU 016B Wednesday 2:00 - 4:00 p.m.
Kahlee Latreille	klatreil@uoguelph.ca ANNU 214
Sabrina Van Schyndel	vanschys@uoguelph.ca Population Medicine Clinical Studies room 209

3 Learning Resources

Course website:

The official website for ANSC*3080 is located on the CourseLink server. You can access the site using your central login username and password. The slides from lectures will be posted as ppt and as pdf (hand out) files on the website at least 2 days prior to lectures.

You are expected to consult AND PRINT YOUR OWN COPY before attending the lecture. This copy will serve as your handout, NO HANDOUT WILL BE PROVIDED IN CLASS. All additional materials and important notices will be posted on the course website.

A “chat room” will be open on CourseLink for questions and answers related to course material and content. Participants (students) are encouraged to answer other participant’s questions. However, I (the instructor) will be moderating (answering questions) the room at least 3 times per week.

3.1 Recommended Resources(s)

The Physiology Coloring book by W. Kapit, R.I. Macey and E. Meisami (2nd edition), Benjamin/Cummings Science Publishing. (Textbook)

Functional Anatomy and Physiology of Domestic Animals by W.O. Reece (3rd edition), Lippincot Williams and Wilkins Publishing. (Textbook)

Functional Anatomy and Physiology of Domestic Animals by W.O. Reece (3rd edition), Lippincot Williams and Wilkins Publishing. (Other)

<http://www.scanvetpress.com>

On sale only on the web.

Human Physiology by S.I. Fox (10th editions) (Other)

On reserve at the library.

Human Physiology: The mechanism of body function by A.J. Vander, J.H. Sherman and D.S. Luciano (8th editions) (Article)

On reserve at the library.

Duke’s Physiology of Domestic Animals by M.J. Swenson and W.O. Reece (Other)

On reserve at the OVC library.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Problem Solving & Critical Thinking:

Through the combination of lectures, laboratory sessions and case studies, student will be able to critically evaluate ideas and arguments by gathering and integrating relevant information, assessing its credibility, and synthesizing evidence to formulate a position. More specifically, students will be able to apply their knowledge and reasoning skills to physiological problems involving the major farm animal species. This outcome will be evaluated in laboratory quizzes and via “problem solving” questions in the final examination.

2. Breadth & Depth of Understanding in a Particular Scientific Discipline:

At the end of this course students will be able to apply the core concepts of math, physics,

chemistry and biology to understand physiological processes. In addition, students will possess a foundational knowledge pertaining to function of the body, with particular reference to the major farm animal species. This outcome will be evaluated by the various quizzes and examinations.

3. Literacy:

By the end of this course students will be familiar with and able to use relevant physiological terms (the language of physiology). This outcome will be evaluated by the various quizzes and examinations.

5 Teaching and Learning Activities

5.1 Lecture Schedule

Date	Topics(s)
September 8	Course Introduction
September 11	Homeostasis and system integration (case of thermoregulation)
September 13	Neurophysiology I: Nerve cell function / Synaptic transmission
September 15	Neurophysiology II: Functional anatomy of the brain and spinal cord
September 18	Neurophysiology III: Reflex arcs and flow of information
September 20	Neurophysiology IV: Autonomic nervous system
September 22	Cardiovascular I: Heart and great vessels
September 25	Cardiovascular II: Cardiac function and control
September 27	Cardiovascular III: Blood pressure and flow
September 29	Cardiovascular IV: Control of blood Volume
October 2	Guest Lecture: Pathophysiology of cardiovascular and nervous systems
October 4	Catch-up lecture / review for mid-term
October 6	MID-TERM EXAMINATION (in class)
October 9	THANKSGIVING, NO CLASS
October 11	Respiratory system I: Structure / Ventilation
October 13	Respiratory system II: Gas exchange / Oxygen transport
October 16	Respiratory system III: Control of respiration
October 18	Endocrinology I: Introduction / Major glands and hormones
October 20	Endocrinology II: Principle of hormone action/Hypothalamus-pituitary axis
October 23	Endocrinology III: Insulin, growth hormone action
October 25	Endocrinology IV: Thyroid, adrenal function / Calcium metabolism

Date	Topics(s)
October 27	Fri Oct 28 Endocrinology V: Importance of Thyroid and adrenal hormones function
October 30	Reproduction I: Male general anatomy
November 1	Reproduction II: Spermatogenesis
November 3	Reproduction III: Female general anatomy
November 6	Reproduction IV: Ovarian cycle, ovulation / Menstrual cycle
November 8	Urinary system I: Kidney structure function
November 10	Urinary system II: Urine formation
November 13	Urinary system III: Water and sodium regulation
November 15	Sensory system I: Gustation / Olfaction
November 17	Sensory system II: Audition / Equilibrium
November 20	LABORATORY EXAMINATION (in class)
November 22	Physiology of senses III: The eye and vision
November 24	Physiology of senses IV: Pain
November 27	Catch-up lecture 1
November 29	Catch-up lecture 2
December 1	Review session (Monday schedule)
TBA	FINAL EXAM (location and time TBA)

5.2 Laboratory Schedule

Date	Topics(s)	References	Details
September 11 - September 15	No Lab		
September 18 - September 22	Nervous System - Structure function (brain and major nerves)	Review of principle - Action Potential	T.A.: TBA - ANNU 110 Evaluation: On-site Training Quiz
September 25 - September 29	Cardiovascular - Structure function (Heart/Major Vessels)	Review of principle - ECG; coupling conduction/contraction	T.A.: AnTBA - ANNU 110

Date	Topics(s)	References	Details
			Evaluation: On-site Quiz; Short Problems 2%
October 2 - October 6	Case Study - Nervous and Cardiovascular Systems		Specific clinical cases pertinent to the nervous and cardiovascular systems will be discussed Evaluation: Not Marked.
October 9 - October 13	Thanksgiving Week - No Labs		
October 16 - October 20	Respiratory System - Structure function (airways/lung)	Review of principle - Gas Exchange	T.A.: TBA Evaluation: On-site quiz; Short Problems 2%
October 23 - October 27	Endocrinology - Major Glands	Review of Principle - Feedback Mechanism	T.A.: TBA Evaluation: On-site Quiz; Short Problems 2%
October 30 - November 3	Case Study - Respiratory/Endocrinology		Specific clinical cases pertinent to the respiratory and endocrine systems will be discussed Evaluation: Not

Date	Topics(s)	References	Details
			graded.
November 6 - November 10	Male Reproduction - Male Anatomy and Semen Collection		T.A.: TBA Evaluation: On-site Quiz; Short Problems 2%
November 13 - November 17	Female Reproduction - Female Reproductive System/Ovulation		T.A.: TBA Evaluation: On-site Quiz; Short Problems 2%
November 20 - November 24	No Lab		Laboratory Exam Monday November 20; In-Class; 20%

6 Assessments

The mid-term evaluation comprises **30 %** of the final mark and will be composed of multiple choice AND short answer questions. The final evaluation comprises of **40 %** of the final mark and will be composed of multiple choice **AND** short answer questions, **AS WELL AS** short problems solving. The laboratory component comprises **30 %** of the final mark, which includes 5 ON-SITE quiz/exercises (10 % total) and a laboratory exam (20 %).

6.1 Marking Schemes & Distributions

Midterm examination (in class): 30%

Final examination (TBA): 40%

Laboratory component (30%): In class quizzes 10%; Lab examination 20%

6.2 Assessment Details

Mid-Term

Date: Friday, October 6, In-Class

Multiple Choice/Short Answer

Final Exam

Date: , TBA

Multiple Choice/Short Answer/Problem Solving

Laboratory Quizzes

Date: Monday, September 12 - Friday, November 25, ANNU 110

One practice and five graded quizzes (2% each) will be schedule thoroughout the semester (see laboratory schedule for detail)

Laboratory Exam

Date: Monday, November 21, In-Class

Short Answer, Problem Solving

7 Course Statements

7.1 Grading Policies

Laboratory quizzes are to be completed during and handed over at the end of each laboratory session. Students will be given their corrected quiz back the following week. Midterm and laboratory examinations will be conducted in class and corrected exams will be returned to students within 2 weeks.

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

8.3 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.

8.4 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.

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.

More information: www.uoguelph.ca/sas

8.6 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.

8.7 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.

8.8 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.
