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-Requisites: BIOC*2580 or EQN*2040
Restrictions: Registration in BSC(Agr), BSC.ABIO or BBRM.EQM, Minor in Agriculture.

1.2 Course 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, endocrine and reproductive systems. Laboratory sessions are designed to overlap with lecture material in a closely integrated fashion with in depth review and reinforcement of key concepts.

1.3 Timetable
Lectures: Monday, Wednesday, Friday 13:30 - 14:20 via Alternative Delivery Synchronous format.

Laboratories: Monday, Tuesday, Wednesday and Thursday 2:30-3:50 p.m. or 4:00-5:20 p.m. depending on section. Will be delivered via Alternative Delivery Synchronous format using the Microsoft Teams platform.

COVID-19 Disclaimer: please be aware that the information on course delivery, accessibility and examinations presented in this outline were developed based on current University
guidelines. However, due to the continuously evolving situation and resulting changes in public health recommendations, the format and delivery of this course may be revised with limited notice.

1.4 Final Exam

At this time, the final examination is scheduled to be performed in person with the possibility of online synchronous (with the use of Respondus lock browser software) depending on health and safety guidelines. Examination date and time are set centrally, please consult 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 principles under discussion. Opportunity for questions and discussion will be provided. Short videos/exercise will be made available online to reinforce the key concepts of each lectures. Presentation slide decks will be uploaded onto CourseLink prior to lectures. Synchronous lectures will also be recorded and posted on the course website for future access and review.

Laboratory/tutorial sessions – A more complete description of these sessions will be provided in separate handouts to be accessible during the first lab period. The laboratory sessions will provide students with an opportunity to integrate knowledge of physiological principles via a review of the system’s structure (organs) and functions within the whole animal, and to apply these principles to problem-solving and case discussion exercises. Synchronous delivery will include short videos and live demonstrations, as well as practical exercises with online support.

2.1 Instructional Support Team

Instructor: Gregoy Bedecarrats  
Email: gbedecar@uoguelph.ca  
Telephone: +1-519-824-4120 x53692  
Office: ANNU 223  
Office Hours: Before class, Monday, Wednesday, Friday from 12:30 to 13:20

Note that under the current circumstances due to COVID-19, communication via email or live chat is preferred.

Lab Co-ordinator: Julie Kim  
Email: jungmi@uoguelph.ca  
Telephone: +1-519-824-4120 x56477  
Office: ANNU 254  
Office Hours: Dr. Julie Kim will serve as laboratory co-ordinator for this
course. As such, most enquiries about lab schedule and content should be directed to her attention.

Email is the preferred means of communication.

### 2.2 Teaching Assistants

<table>
<thead>
<tr>
<th>Teaching Assistant (GTA)</th>
<th>Email</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gillian Power</td>
<td><a href="mailto:gpower@uoguelph.ca">gpower@uoguelph.ca</a></td>
<td>Assigned to the nervous system and the cardiovascular system laboratories.</td>
</tr>
<tr>
<td>Tianna Sullivan</td>
<td><a href="mailto:tsulli03@uoguelph.ca">tsulli03@uoguelph.ca</a></td>
<td>Assigned to the endocrinology and female reproduction laboratories.</td>
</tr>
<tr>
<td>Lydia Conrad</td>
<td><a href="mailto:lconra01@uoguelph.ca">lconra01@uoguelph.ca</a></td>
<td>Assigned to nervous system and endocrinology laboratories.</td>
</tr>
<tr>
<td>Mohammad Bahry</td>
<td><a href="mailto:mbahry@uoguelph.ca">mbahry@uoguelph.ca</a></td>
<td>Assigned to the Respiratory System and Female Reproduction Laboratories.</td>
</tr>
<tr>
<td>Siobhan Mellors</td>
<td><a href="mailto:smellors@uoguelph.ca">smellors@uoguelph.ca</a></td>
<td>Assigned to Cardiovascular System and Male Reproduction Laboratories.</td>
</tr>
</tbody>
</table>

### 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. All additional materials and important notices will be posted on the course website.

Synchronous access to lectures will be provided through the ZOOM platform embedded in CourseLink. Following lectures, the video recording will be made accessible on CourseLink after rendering (generally 24 to 48h after recording).

Although laboratory sessions will be performed in person, in the eventuality of a switch to alternate synchronous delivery format, access will be provided through the Microsoft Teams platform. Students will receive an invitation to join their specific laboratory section. If you cannot attend a particular section, please contact the laboratory coordinator (Dr. Julie Kim) in
advance to schedule an alternative section.

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.

**Technical Help for CourseLink**

This course is being offered using CourseLink (powered by D2L’s Brightspace), the University of Guelph’s online learning management system (LMS). By using this service, you agree to comply with the University of Guelph’s Access and Privacy Guidelines. Please visit the D2L website to review the Brightspace privacy statement and Brightspace Learning Environment web accessibility standards.


Technical Support

If you need any assistance with the software tools or the CourseLink website, contact CourseLink Support.

Email: courselink@uoguelph.ca

Tel: 519-824-4120 ext. 56939 Toll-Free (CAN/USA): 1-866-275-1478

Support Hours (Eastern Time):

Monday thru Friday: 8:30 am–8:30 pm

Saturday: 10:00 am–4:00 pm

Sunday: 12:00 pm–6:00 pm

**3.1 Required Resources**

**System and Software Requirements (Software)**

With the planned synchronous delivery for both lectures, students should ensure/test they have reliable access to the internet and can logon to the CourseLink site. In addition, students will be required to have access to the Zoom software/App and that their browser is compatible with Respondus LockDown Browser.

The use of Microsoft Teams is embedded in Office 365 and invitation will be send via the outlook calendar.

To help ensure you have the best learning experience possible, please review the list of system and software requirements at: https://opened.uoguelph.ca/student-
3.2 Recommended Resources

The Physiology Coloring book by W. Kapit, R.I. Macey and E. Meisami (2nd edition), Benjamin/Cummings Science Publishing. (Textbook)
Inexpensive alternative. Focuses on human physiology but applicable to all animals.

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

Physiology of Domestic Animals (Other)
http://www.scanvetpress.com
Used extensively for pictures and diagrams shown in lecture.

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. An eBook available for the newer 2015 edition (9781118501498) is available through the 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, students 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 examinations.

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

Fri, Sep 10, 1:30 PM - 2:20 PM
Topics: Course Introduction

Mon, Sep 13, 1:30 PM - 2:20 PM
Topics: Homeostasis and system integration (case of thermoregulation)

Wed, Sep 15, 1:30 AM - 2:20 PM
Topics: Neurophysiology I: Nerve cell function / Synaptic transmission

Fri, Sep 17, 1:30 PM - 2:20 PM
Topics: Neurophysiology II: Functional anatomy of the brain and spinal cord

Mon, Sep 20, 1:30 PM - 2:20 PM
Topics: Neurophysiology III: Reflex arcs and flow of information

Wed, Sep 22, 1:30 PM - 2:20 PM
Topics: Neurophysiology IV: Autonomic nervous system

Fri, Sep 24, 1:30 PM - 2:20 PM
Topics: Cardiovascular I: Heart and great vessels

Mon, Sep 27, 1:30 PM - 2:20 PM
Topics: Cardiovascular II: Cardiac function and control

Wed, Sep 29, 1:30 PM - 2:20 PM
Topics: Cardiovascular III: Blood pressure and flow

Fri, Oct 1, 1:30 PM - 2:20 PM
Topics: Cardiovascular IV: Control of blood Volume

Mon, Oct 4, 1:30 PM - 2:20 PM
Topics: Catch-up lecture

Wed, Oct 6, 1:30 PM - 2:20 PM

Topics: Review for the midterm 1

Fri, Oct 8, 1:30 PM - 2:20 PM

Topics: MIDTERM EXAMINATION 1 - ONLINE DURING CLASS TIME

Covers homeostasis, nervous system and cardiovascular system.

Mon, Oct 11

Topics: THANKSGIVING - NO CLASS

Wed, Oct 13, 1:30 PM - 2:20 PM

Topics: Respiratory system I: Airways and Ventilation

Fri, Oct 15, 1:30 PM - 2:20 PM

Topics: Respiratory system II: Gas exchange / Oxygen transport

Mon, Oct 18, 1:30 PM - 2:20 PM

Topics: Respiratory system III: Control of respiration

Wed, Oct 20, 1:30 PM - 2:20 PM

Topics: Endocrinology I: Introduction / Major glands and hormones

Fri, Oct 22, 1:30 PM - 2:20 PM

Topics: Endocrinology II: Principle of hormone action/Hypothalamus-pituitary axis

Mon, Oct 25, 1:30 PM - 2:20 PM

Topics: Endocrinology III: Insulin, growth hormone action

Wed, Oct 27, 1:30 PM - 2:20 PM

Topics: Endocrinology IV: Thyroid, adrenal function / Calcium metabolism

Fri, Oct 29, 1:30 PM - 2:20 PM
Topics: Catchup lecture / review for midterm 2

Mon, Nov 1, 1:30 PM - 2:20 PM
Topics: MIDTERM EXAMINATION 2 - ONLINE DURING CLASS TIME

Material covered includes respiratory and endocrine systems.

Wed, Nov 3, 1:30 PM - 2:20 PM
Topics: Reproduction I: Sexual differentiation

Fri, Nov 5, 1:30 PM - 2:20 PM
Topics: Reproduction II: Male general anatomy

Mon, Nov 8, 1:30 PM - 2:20 PM
Topics: Reproduction III: Spermatogenesis

Wed, Nov 10, 1:30 PM - 2:20 PM
Topics: Reproduction IV: Female general anatomy

Fri, Nov 12, 1:30 PM - 2:20 PM
Topics: Reproduction V: Ovarian cycle, ovulation

Mon, Nov 15, 1:30 PM - 2:20 PM
Topics: Reproduction VI: Menstrual cycle, placentation

Wed, Nov 17, 1:30 PM - 2:20 PM
Topics: Urinary system I: Kidney structure function

Fri, Nov 19, 1:30 PM - 2:20 PM
Topics: Urinary system II: Urine formation

Mon, Nov 22, 1:30 AM - 2:20 PM
Topics: Urinary system III: Water and sodium regulation

Wed, Nov 24, 1:30 PM - 2:20 PM
Topics: LABORATORY EXAMINATION ONLINE SYNCHRONOUS

Fri, Nov 26, 1:30 PM - 2:20 PM
Topics: Catch up lecture 1

Mon, Nov 29, 1:30 PM - 2:20 PM
Topics: Catch-up lecture 2

Wed, Dec 1, 1:30 PM - 2:20 PM
Topics: Catchup lecture 3

Fri, Dec 3, 1:30 PM - 2:20 PM
Topics: Review session (Thanks Giving Monday schedule)

5.2 Lab
Mon, Sep 13 - Fri, Sep 17
Topics: No Laboratory scheduled

Mon, Sep 20 - Fri, Sep 24
Topics: Nervous System Laboratory - Structure function (brain, spinal cord and major nerves)

References: Review of principle - Action Potential / Synaptic Transmission
T.A.: Lydia Conrad; Gillian Power
Evaluation: Online Synchronous Training Quiz

Mon, Sep 27 - Fri, Oct 1
Topics: Cardiovascular System Laboratory - Structure function (Heart/Major Vessels)

References: Review of principle - ECG; coupling conduction/contraction
T.A.: Siobban Mellors, Gillian Power

Evaluation: Online Synchronous Quiz, Short Problems 2%

Mon, Oct 4 - Fri, Oct 8

Topics: Case Study I - Nervous and Cardiovascular Systems

TA: Gregoy Bedecarrats

Specific clinical cases pertinent to the nervous and cardiovascular systems will be discussed from symptoms to physiological significance and prognosis and treatments.

Evaluation: Not Marked.

Mon, Oct 11 - Fri, Oct 15

Topics: Thanksgiving Week - No Labs

Mon, Oct 18 - Fri, Oct 22

Topics: Respiratory System Laboratory - Structure function (airways/lung)

References: Review of principle - Gas Exchange and Gas Transport
T.A.: Mohammad Bahry

Evaluation: Online Synchronous Quiz, Short Problems 2%

Mon, Oct 25 - Fri, Oct 29

Topics: Endocrinology Laboratory - Major Glands Structure Function

References: Review of Principle - Feedback Mechanism
T.A.: Tianna Sullivan, Lydia Conrad

Evaluation: Online Synchronous Quiz, Short Problems 2%
Mon, Nov 2 - Fri, Nov 6
Topics: Case Study II - Respiratory and Endocrinology Systems
T.A.: Gregoy Bedecarrats
Specific clinical cases pertinent to the respiratory and endocrine systems will be discussed from diagnosis to physiological significance and prognosis.
Evaluation: Not graded.

Mon, Nov 8 - Fri, Nov 12
Topics: Male Reproduction Laboratory - Male Anatomy and Semen Collection/Processing
T.A.: Siobhan Mellors; Tianna Sullivan
Evaluation: Online Synchronous Quiz, Short Problems 2%

Mon, Nov 15 - Fri, Nov 19
Topics: Female Reproduction Laboratory - Female Reproductive Anatomy
Review of the Ovulation process
T.A.: Mohammad Bahry
Evaluation: In class Quiz; Short Problems 2%

Mon, Nov 22 - Fri, Nov 26
Topics: No Labs this week.
Lab exam FOR ALL LAB SECTIONS on Wednesday Nov 24 online synchronous during regular lecture time.

6 Assessments
The mid-term evaluations account for 40 % in total of the final mark with mid-term
evaluation 1 worth 20 %, and mid-term evaluation 2 worth 20 %. Mid-term evaluations will be composed of multiple choices AND short answer questions. Both will be performed online synchronously during lecture time on Oct. 8 and Nov. 1, respectively. The final evaluation accounts for 30 % of the final mark and will be composed of multiple choices AND short answer questions, AS WELL AS short problems solving. The laboratory component accounts for 30 % of the final mark, which includes 5 in class quizzes/exercises (10 % total) and a laboratory examination (20 %) to be conducted synchronously during class time on Nov. 24, 2020.

Use of Respondus lockdown browser will be implemented during synchronous mid-term and laboratory examinations.

Please note that the final examination IS NOT cumulative, meaning that no questions will be designed to specifically target the material covered prior to the midterms. However, as all systems covered during the semester are integrated, remembering key concepts for a full understanding of the subject may help answer some of the problem solving questions.

6.1 Marking Schemes & Distributions

Midterm examinations 1 & 2 (online synchronous during class time): 20% each (40% total)

Final examination (TBA): 30%

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

6.2 Assessment Details

Mid-Term Examination 1 (20%)
  Date: Fri, Oct 8, 1:30 PM - 2:20 PM, Online synchronous
  Learning Outcome: 2, 3
  Material included: Homeostasis, Nervous and Cardiovascular Systems.

  Format: Multiple Choices and Short Answer Questions

Midterm examination 2 (20%)
  Date: Mon, Nov 1, 1:30 PM - 2:20 PM, Online synchronous
  Learning Outcome: 2, 3
  Material included: Respiratory and Endocrine Systems

  Format: Multiple Choices and Short Answer Questions

Final Examination (30%)
  Date: TBA
  Learning Outcome: 1, 2, 3
  Material included: Reproductive and Urinary Systems
Format: Multiple Choices, Short Answer Questions and Problem Solving.

Laboratory Quizzes (10%)
- **Date:** Mon, Sep 20 - Fri, Nov 19, ANNU 110
- **Learning Outcome:** 1, 2, 3
  - One practice and five graded quizzes (2% each) will be schedule throughout the semester (see laboratory schedule for details)

Laboratory Examination (20%)
- **Date:** Wed, Nov 24, 1:30 PM - 2:20 PM, Online synchronous
- **Learning Outcome:** 1, 2, 3
  - Material included: All laboratory material including the case studies.
  - Format: Short Answer Questions and Problem Solving,

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7 Course Statements

7.1 Grading Policies

Laboratory quizzes are to be completed during laboratory sessions and submitted by the end of each laboratory session. Students will be given their corrected quiz back the following week (once all sections have completed the lab component). Midterms and laboratory examinations will be conducted online synchronously during class time and, corrected exams will be returned to students within 2 weeks.

7.2 Netiquette Expectations

The course website is considered the classroom and the same protections, expectations, guidelines, and regulations used in face-to-face settings apply. Inappropriate behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students;
- Using offensive language;
- 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;

· 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; and

· Sharing your username and password

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
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.
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, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. 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

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- https://news.uoguelph.ca/return-to-campuses/how-u-of-g-is-preparing-for-your-safe-return/
• https://news.uoguelph.ca/return-to-campuses/spaces/#ClassroomSpaces

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.