

ANSC*3080 - Agricultural Animal Physiology

Fall 2024 Course Outline

Section: 01

Credits: 0.50

Land Acknowledgement: Guelph

The University of Guelph resides on the ancestral lands of the Attawandaron people and the treaty lands and territory of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Covenant to this land and offer respect to our Anishinaabe, Haudenosaunee and Métis neighbours. Today, this gathering place is home to many First Nations, Inuit, and Métis peoples and acknowledging them reminds us of our important connection to this land where we work and learn.

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.

Prerequisite(s): 1 of BIOC*2580, EQN*2040, EQN*2050

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

Department(s): Department of Animal Biosciences

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.

Lecture Schedule

Lab Sections Schedule

Day	Time	Location	Sections
Monday	2:30 PM - 3:50 PM	ANNU 110	01
Monday	4:00 PM - 5:20 PM	ANNU 110	02
Tuesday	2:30 PM - 3:50 PM	ANNU 110	03
Tuesday	4:00 PM - 5:20 PM	ANNU 110	04
Thursday	2:30 PM - 3:50 PM	ANNU 110	05
Thursday	4:00 PM - 5:20 PM	ANNU 110	06
Wednesday	2:30 PM - 3:50 PM	ANNU 110	07
Wednesday	4:00 PM - 5:20 PM	ANNU 110	08

Instructor Information

Gregoy Bedecarrats

Additional Support

Laboratory Coordinator:

Dr. Julie Kim; Email: jungmi@uoguelph.ca. Dr. Kim oversee the execution of laboratory sessions as well as the laboratory quizzes

Teaching Assistants:

Clara Ziezold; Email: cziezold@uoguelph.ca; Assigned to the Endocrine and Female Reproduction laboratory sessions

Rebecka Sadler; Email: sadlerr@uoguelph.ca; Assigned to the Nervous and Cardiovascular systems laboratory sessions

Robert Fera; Email: rfera@uoguelph.ca; Assigned to the Cardiovascular and Male Reproduction laboratory sessions

Emily Knapper; Email: knappere@uoguelph.ca; Assigned to the Nervous and respiratory systems laboratory sessions

Faith Kurtz; Email: fkurtz@uoguelph.ca; Assigned to the Respiratory and Male Reproduction laboratory sessions

Amir Sarrafchi; Email: asarrafc@uoguelph.ca; Assigned to the Endocrinology and Female Reproduction laboratory sessions

Learning Resources

Required Resources

All the material relevant to this course (including lecture slides and lab content) will be posted on the Course link (Website) (<https://courselink.uoguelph.ca/>)

Campus Resources

If you are concerned about any aspect of your academic program: Make an appointment with a Program Counsellor (<https://www.uoguelph.ca/uaic/programcounsellors/>) in your degree program. If you are struggling to succeed academically: There are numerous academic resources offered by the Learning Commons (<https://www.lib.uoguelph.ca/using-library/spaces/learning-commons/>) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills.

Library Course Reserve (Ares)

For this course, you will be required to access course reserve materials through the University of Guelph McLaughlin Library. To access these items, select **Ares** on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit [How to Get Course Reserve Materials \(https://www.lib.uoguelph.ca/find/course-reserves-ares/\)](https://www.lib.uoguelph.ca/find/course-reserves-ares/).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621 | Email: libres2@uoguelph.ca | Location: McLaughlin Library, First Floor, University of Guelph

Course Learning Outcomes

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.

Lectures

Day	Date:	Topic	Activities	Due
Fri	9/6	Lecture 1: Course Introduction	Review Course Outline / Address questions	
Mon	9/9	Lecture 2: Homeostasis and system integration (case of thermoregulation)		

Wed	9/11	Lecture 3: Neurophysiology I: Nerve cell function / Synaptic transmission
Fri	9/13	Lecture 4: Neurophysiology II: Functional anatomy of the brain and spinal cord
Mon	9/16	Lecture 5: Neurophysiology III: Reflex arcs and flow of information
Wed	9/18	Lecture 6: Neurophysiology IV: Autonomic nervous system
Fri	9/20	Lecture 7: Cardiovascular I: Heart and great vessels
Mon	9/23	Lecture 8: Cardiovascular II: Cardiac function and control
Wed	9/25	Lecture 9: Cardiovascular III: Blood pressure and flow
Fri	9/27	Lecture 10: Cardiovascular IV: Control of blood Volume
Mon	9/30	Catch-up lecture / Review for midterm 1
Wed	10/2	Lecture 11: Respiratory system I: Airways and Ventilation
Fri	10/4	Lecture 12: Respiratory system II: Gas exchange / Oxygen transport
Mon	10/7	Lecture 13: Respiratory system III: Control of respiration
Wed	10/9	MIDTERM EXAMINATION 1 - DURING CLASS Midterm 1 (in class) topics covered: TIME IN PERSON Nervous System & Cardiovascular System
Fri	10/11	Lecture 14: Endocrinology I: Introduction / Major glands and hormones
Mon	10/14	Thanksgiving Holiday
Wed	10/16	Lecture 15: Endocrinology II: Principle of hormone action
Fri	10/18	Lecture 16: Endocrinology III: Hypothalamus-pituitary axis (Integration)
Mon	10/21	Lecture 17: Endocrinology IV: Insulin, growth hormone action
Wed	10/23	Lecture 18: Endocrinology V: Thyroid, adrenal function / Calcium metabolism
Fri	10/25	Catchup lecture / review for midterm 2
Mon	10/28	Lecture 19: Reproduction I: Sexual differentiation
Wed	10/30	MIDTERM EXAMINATION 2 - DURING CLASS Midterm 2 (in class) topics covered: TIME IN PERSON Respiratory System & Endocrine System
Fri	11/1	Lecture 20: Reproduction II: Male general anatomy
Mon	11/4	Lecture 21: Reproduction III: Spermatogenesis
Wed	11/6	Lecture 22: Reproduction IV: Female general anatomy
Fri	11/8	Lecture 23: Reproduction V: Ovarian cycle, ovulation
Mon	11/11	Lecture 24: Reproduction VI: Menstrual cycle, placentation
Wed	11/13	Catch up lecture on reproduction
Fri	11/15	Lecture 25: Urinary system I: Kidney structure function

Mon	11/18	Lecture 26: Urinary system II: Urine formation	
Wed	11/20	LABORATORY EXAMINATION IN PERSON DURING SCHEDULED LECTURE TIME	Lab Exam (in class), material covered: all laboratory sessions
Fri	11/22	Lecture 27: Urinary system III: Water and sodium regulation	
Mon	11/25	Catch up lecture on Urinary System	
Wed	11/27	Final catch up	
Fri	11/29	Optional review session for the final examination	

Lab / Seminar Schedule

Laboratory 1: Nervous system

September 16 to 19; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Practice quiz to be completed during lab time

Laboratory 2: Cardiovascular system

September 23 to 26; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Quiz worth 2% to be completed during lab time

Laboratory 3: Case study I

September 30 to October 3; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Two clinical cases covering the nervous and cardiovascular systems will be covered.

Laboratory 4: Respiratory System

October 7 to 10; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Quiz worth 2% to be completed during lab time

Laboratory 5: Endocrine System

October 21 to 24; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Quiz worth 2% to be completed during lab time

Laboratory 6: Case Study II

October 28 to October 31; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Two clinical cases on the respiratory and endocrine systems will be discussed.

Laboratory 7: Male Reproduction

November 4 to 7; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Quiz worth 2% to be completed during lab time

Laboratory 8: Female Reproduction

November 11 to 15; from 14:30 to 15:50 or from 16:00 to 17:30 depending on section. ANNU110

Quiz worth 2% to be completed during lab time

Detailed information on laboratory sessions will be posted on the CourseLink website ahead of time

Assessment Breakdown

Description	Weighting (%)	Due Date
Midterm #1	20%	Wednesday October 9, In Class
Midterm # 2	20%	Wednesday October 30, In Class
Lab Exam	20%	Wednesday November 20, In Class
Lab quizzes	10%	5 quizzes worth 2% each (Lab 2, 4, 5, 7, 8)
Final Examination	30%	Saturday December 7, from 14:30 to 16:30. Location TBD

Assessment Details

Midterm

Midterms 1 & 2

20% each

Both midterms will take place in person during regular class time in the classroom (ROZH 101). The format of midterm examinations corresponds to multiple choice and short answer questions

Course Learning Outcomes Assessed: 2, 3

Quizzes

Lab quizzes

10%

Five lab quizzes worth 2% each will take place in Lab 2, 4, 5, 7 and 8. These quizzes correspond to short answer questions and small problem solving. Quizzes should be completed during lab time and submitted online 24h following the lab session.

Course Learning Outcomes Assessed: 1, 2, 3

Exam

Lab exam

20%

The laboratory examination will take place in person in class (ROZH 101) and corresponds to short answer and problem solving questions similar to lab quizzes.

Course Learning Outcomes Assessed: 1, 2, 3

Final Examination

30%

The final examination will take place in person at the scheduled time (Saturday December 7, 14:30-16:30). The format corresponds to multiple choice and short answer questions, and short problem solving. **Note that the final IS NOT cumulative and covers the material from the reproductive and urinary systems.**

Course Learning Outcomes Assessed: 1, 2, 3

Final Exam

Date: Dec 7

Time: Sa 2:30pm-4:30pm

Location: TBA *Please see Web Advisor closer to the date of scheduled final for location.*

To understand rules and regulations regarding Examinations students are encouraged to read Student's Responsibilities (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/examinations/>)

If the student is unable to meet the final exam requirements due to medical, psychological or compassionate circumstances they are encouraged to review Student's Responsibilities in the Academic Consideration, Appeals and Petitions (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>) section of the Academic Calendar.

Grading Schemes

Midterm Examinations Total: 40%

- Midterm 1 (20%)
- Midterm 2 (20%)

Laboratory component Total: 30%

- Lab quizzes (10%)
- Lab exam (20%)

In person Final Exam (30%)

Last Day to Drop Course

The final day to drop Fall 2024 courses without academic penalty is the last day of classes: November 29

After this date, a mark will be recorded, whether course work is completed or not (a zero is assigned for missed tests/assignments). This mark will show on the student's transcript and will be calculated into their average.

Course Grading Policies

Laboratory quizzes

These quizzes are to be completed online during each laboratory session and should be submitted no later than the day students have taken each specific lab.

Standard Statements for Undergraduate Courses

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 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 (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-misconduct/>) is outlined in the Undergraduate Calendar.

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 make a booking at least 10 days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. For students at the Guelph campus, information can be found on the SAS website. (<https://www.uoguelph.ca/sas/>)

Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements.

See the Academic calendar for information on regulations and procedures for Academic Accommodations of Religious Obligations (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-accommodation-religious-obligations/>).

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.

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 undergraduate students 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 the Undergraduate Calendar - Dropping Courses (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/dropping-courses/>).

Email Communication

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

Health and Wellbeing

The University of Guelph provides a wide range of health and wellbeing services at the Vaccarino Centre for Student Wellness (<https://wellness.uoguelph.ca/>). If you are concerned about your mental health and not sure where to start, connect with a Student Wellness Navigator (<https://wellness.uoguelph.ca/navigators/>) who can help develop a plan to manage and support your mental health or check out our mental wellbeing resources (<https://wellness.uoguelph.ca/shine-this-year/>). The Student Wellness team are here to help and welcome the opportunity to connect with you.

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).

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.

Resources

The Academic Calendars (<http://www.uoguelph.ca/registrar/calendars/?index>) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

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. See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration. (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>)