



ANSC*2340 Structure of Farm Animals

Winter 2020

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - January 03, 2020

1 Course Details

1.1 Calendar Description

This course is an introduction to anatomy and carcass structure of farm animals. Consideration is given to the major systems in the body and the whole range of animal structure from molecular biology to commercial carcass grading. The course provides a basic understanding of factors such as meat tenderness, adipose development in the carcass, abnormalities of meat quality such as PSE pork and dark-cutting beef, and carcass composition.

Pre-Requisites: 2 of BIOL*1050, BIOL*1070, BIOL*1080, BIOL*1090

1.2 Course Description

This course is an introduction to anatomy and carcass structure of farm animals. Consideration is given to the major systems in the body and the whole range of animal structure from molecular biology to commercial carcass grading. The course provides a basic understanding of factors such as meat tenderness, adipose development in the carcass, abnormalities of meat quality such as PSE pork and dark-cutting beef, and carcass composition.

1.3 Timetable

Lectures: Monday, Wednesday, Friday at 8:30 A.M. - 9:20 A.M. MACN 105

Labs are all on-line

1.4 Final Exam

2:30 P.M. - 4:30 P.M. on April 7, 2020. Location for exam will be determined at a later date. Please check WebAdvisor towards the end of the semester.

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Ira Mandell
Email:	imandell@uoguelph.ca
Telephone:	+1-519-824-4120 x53337
Office:	ANNU 155
Office Hours:	Tuesday 4:00 P.M. to 5:00 P.M. or by appointment.

3 Learning Resources

3.1 Required Resources

Clinical Anatomy and Physiology for Veterinary Technicians - Thomas Colville and Joanna M. Bassert (Textbook)
3rd Edition 2016
Mosby Elsevier
ISBN: 978-0-323-22793-3

3.2 On-line materials

Courselink will be used:

1. to distribute lecture outline notes
2. to access labs
3. to answer questions from students that will be beneficial to the entire class, and
4. as a source of the course and laboratory outlines, and
5. to post midterm marks.

For lectures starting January 8, students will have to print off their own copies of the lecture outline notes.

The lecture outlines are not full class notes. The purpose of the lecture outline notes is to provide the student with the main topics of interest, major points, and discussion topics for a given lecture. The lecture outline notes will direct students to the material that will be covered on the midterm and final examinations. Each student should check Courselink the evening before a scheduled lecture to check if new lecture outline notes have been uploaded.

Labs for the course can be found under "Content" on CourseLink; there are 6 labs in the course.

Videos for the labs can be found under "Content" on CourseLink by clicking on Ares Course Reserve Lists- ANSC 2340- Winter 2020. Under Ares Course Reserve Lists, you will see

“Sorted By Tag - ANSC2340 - Winter 2020 - Ares Course Reserve Items”. You will use this to access videos for the 6 labs in the course (Lab 01 to Lab 06).

3.2 Additional Costs

Students need to cover the cost of the required textbook and the costs of printing out lecture outline notes, lab handouts, and web based lab content.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Specific Course Learning Outcomes for the course overall:
 - Identify the major structures and recognize the function(s) of these structures found in major mammalian and avian systems.
2. Specific Course Learning Outcomes for the course overall:
 - Explain how muscle contraction and relaxation occurs and the involvement of the nervous system in the processes.
3. Specific Course Learning Outcomes for the course overall:
 - Describe the conversion of muscle to meat and the factors affecting the process.
4. Specific Course Learning Outcomes for the course overall:
 - Differentiate the major connective tissues found in animals and how they influence animal function and production, and meat quality.
5. Specific Course Learning Outcomes for the course overall:
 - Identify animal differences in structure(s) which are responsible for species specific “lifestyles” in regards to digestive, reproductive, and transportation functions.
6. Specific Course Learning Outcomes for the course overall:

- Recognize the importance of carcass grading and the factors responsible for differentiating carcass quality.

7. Specific Course Learning Outcomes for the course overall:

- Identify the processes involved in the slaughter of meat animals and the rationale behind species differences for dressing the carcass.

8. Specific Course Learning Outcomes for B.Sc. (Agr) - Animal Science major:

- Acquire and develop relevant, practical, and theoretical skills based on the needs of the agricultural animal industry to support future employment and / or continued studies (e.g. graduate studies, veterinary medicine and care, professional certification)

9. Specific Course Learning Outcomes for B.Sc. (Agr) - Animal Science major:

- Demonstrate advanced, contemporary and relevant knowledge in animal nutrition, physiology, welfare, genetics and biotechnology

10. Specific Course Learning Outcomes for B.Sc. Honours Major in Animal Biology

- Acquire and develop relevant practical and theoretical skills to support continued studies (e.g. graduate studies, veterinary medicine, etc.) and/or potential employment (e.g. veterinary care, animal industry, zoological institutions, etc.)

11. Specific Course Learning Outcomes for B.Sc. Honours Major in Animal Biology

- Demonstrate knowledge encompassing genetics, nutrition, physiology and behavior and their interactions on the health and welfare of domesticated, companion and wildlife animal species.

12. Specific Course Learning Outcomes for B.Sc. Honours Major in Animal Biology

- Apply an integrated and broad foundation of life sciences (from molecules to populations) to appreciate and further explore the relationship of animals within

society.

5 Teaching and Learning Activities

Note: This is a tentative lecture schedule that may be modified depending on circumstances.

5.1 Lecture

Topics:	Overview of course
Topics:	Basic concepts of animal structure
References:	Textbook readings: pages 1 to 10. FOR ALL TEXTBOOK READINGS, DO NOT WORRY ABOUT "CLINICAL APPLICATION" SECTIONS
Topics:	Integument: Skin, Feathers, Horns, Hooves
References:	Textbook readings: pages 147 to 168 (excluding LAYERS OF THE EPIDERMIS on pages 150 to 151, SPECIAL FEATURES OF THE INTEGUMENT on pages 156 to 157, and pages 165 starting with the "lamina corium" to the start of "Horns" on page 167).
Topics:	Gastrointestinal tract and Teeth:
References:	Textbook readings: pages 378-415 (excluding pages 398 to 402, 406-411, 414-415).
Topics:	Cardiovascular System
References:	Textbook readings: pages 338 to 360 (excluding sections on Abnormal Heart Sounds, Cardiac Output, Blood Circulation in the Fetus, Pulse Points, Echocardiography, and Venipuncture).
Topics:	Respiratory System
References:	Textbook readings: pages 361 to 372 and the section on Exchange of Gases in Alveoli (Page 374).
Topics:	Urinary System
References:	Textbook readings: pages 445 to 460 (excluding pages 455-458).
Topics:	Reproductive System
References:	Textbook readings: pages Starting from Male Reproductive System on Page 469 to 483 (excluding Ovarian Cycle), and pages 491 to 497.
Topics:	Major Bones in the Skull
References:	Textbook readings: pages 180 to 188.
Topics:	Organization of the Nervous System

- References:** Textbook readings: pages 226 to 247.
- Topics:** Transmission of Electrical Impulses
- References:** Textbook readings: pages 226 to 247.
- Topics:** Anatomy of the Brain
- References:** Textbook readings: pages 226 to 247.
- Topics:** Endocrine System
- References:** Textbook readings: pages 273 to 280.
- Topics:** Midterm 1
- References:** Tentative date is Saturday, February 8th; Time and location to be determined
- Topics:** Organization of Muscle and the Myofibril
- References:** Textbook readings: pages 210 to 213 and 217 to 222.
- Topics:** Muscle Contraction
- References:** Textbook readings: pages 210 to 213 and 217 to 222.
- Topics:** Muscle Contraction continued
- References:** Textbook readings: pages 210 to 213 and 217 to 222.
- Topics:** Muscle Relaxation
- References:** Textbook readings: pages 210 to 213 and 217 to 222.
- Topics:** Energy for Muscle Contraction
- References:** Textbook readings: pages 435 to 440.
- Topics:** Winter Break
- References:** Monday, February 17 to Friday, February 21
- No classes
- Topics:** Conversion of Muscle to Meat I
- Topics:** Conversion of Muscle to Meat II
- Topics:** PSE and DFD
- Topics:** PSE and DFD
- Topics:** Collagen and Elastin
- Topics:** Factors Affecting Meat Quality

Topics:	Structure and Roles of Adipose Tissue
References:	Textbook readings: pages 119-129.
Topics:	Midterm 2
References:	Tentative date is Saturday, March 7th; Time and location to be determined
Topics:	Fat Deposition and Types
Topics:	Organization of Bone and Bone Formation
References:	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
Topics:	Types of Bone and Their Function in the Body
References:	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
Topics:	Cartilage versus Bone
References:	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
Topics:	Effect of Gene Mutations on Carcass and Meat Quality
Topics:	Avian Systems: Reproduction and Laying of Eggs
Topics:	Avian Systems: Comparison of Mammalian versus Avian Systems (Skeleton and Muscles)
Topics:	Carcass Grading
Topics:	Carcass Grading (Continued)
Topics:	Lecture topic to be announced
Topics:	Lecture topic to be announced
Topics:	Final Exam
	Tuesday, April 7th from 2:30 P.M. until 4:30 P.M. Room to be arranged.

5.2 Labs

All lab materials will be accessed on-line and will include written materials from the course website and video presentations.

Labs for the course can be found under "Content" on CourseLink; there are 6 labs in the course.

Videos for the labs can be found under "Content" on CourseLink by clicking on Ares Course Reserve Lists- ANSC 2340- Winter 2020. Under Ares Course Reserve Lists, you will see

"Sorted By Tag - ANSC2340 - Winter 2020 - Ares Course Reserve Items". You will use this to access videos for the 6 labs in the course (Lab 01 to Lab 06).

You can access the video presentations from any personal computer with web access, or at computers in the library. There are no designated lab sections; you access the lab materials on your own. Students are responsible for the written, video, and audio contents of the labs. Courselink will be used to provide supplementary lab materials that will be provided over the semester. Unless otherwise stated, students are responsible for learning all materials presented in the video presentations, the accompanying written text, and supplementary materials found on Courselink.

Lab 01: Beef Slaughter: Week 1 of the course (January 6)

Lab 02: Pig Slaughter: Week 2 of the course (January 13)

Lab 03: Sheep Slaughter: Week 5 of the course (February 3)

Lab 04: Poultry Slaughter: Week 6 of the course (February 10)

Lab 05: Forequarter muscles & skeleton: Week 8 of the course (March 2)

Lab 06: Hindquarter muscles & skeleton: Week 10 of the course (March 16)

6 Assessments

6.1 Assessment Details

Midterm 1 (25%)

Date: February 8, 2020 (tentative date), Time and location to be determined

Learning Outcome: 1, 3, 4, 6, 9

Midterm 2 (25%)

Date: March 7th, 2020 (tentative date), Time and location to be determined

Learning Outcome: 1, 3, 4, 6, 7, 8, 9

Final Exam (50%)

Date: Tue, Apr 7, 2:30 PM - , 4:30 PM, To be determined

Learning Outcome: 1, 2, 3, 4, 5, 6, 7, 8, 9

7 Course Statements

7.1 Grading Policies

Exam questions will be based ENTIRELY on the lectures, textbook, and labs. For all exams, there will be questions from the textbook, and each lecture and lab up to the date of the exam. The format of the exam will include multiple choice and short answer questions.

Midterm exams are scheduled outside of lecture time to enable students to take their time in writing the exam. There may be conflicts with these exam times for individual students which will have to be accommodated in most instances. If the times for the midterms conflict with most students in the class, then alternative times and dates will be investigated or the midterm will be taken during lecture from 8:30 to 9:20 P.M. A weather emergency will result in the exam being postponed and moved to the next lecture period. Students writing at the SAS exam center are encouraged to schedule their exams earlier in the day for the midterms (1 hour before the start of the regularly scheduled exam) and the final so that Dr. Mandell can visit the SAS Exam Centre and ask students writing at the SAS exam center if they have questions.

If a student misses a scheduled exam, we reserve the right to change the format of the exam for students. A short answer question format will be used for students who write the exam any time after the week that the exam was originally scheduled. *Please note that these policies are binding unless academic consideration is given to an individual student.*

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>
