



# **ANSC\*2340 Structure of Farm Animals**

Winter 2019

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - January 04, 2019

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## **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-Requisite(s):** 2 of BIOL\*1050, BIOL\*1070, BIOL\*1080, BIOL\*1090

### **1.2 Course Description**

This course is an introduction to the carcass structure of cattle, pigs, sheep and poultry. Animal growth and development are considered in relation to meat production.

### **1.3 Timetable**

Lectures: Monday, Wednesday, Friday at 4:30 P.M. - 5:20 P.M. ALEX 200

Labs are all on-line

### **1.4 Final Exam**

11:30 A.M. - 1:30 P.M. on April 10, 2019. Location for exam will be determined at a later date. Please check WebAdvisor towards the end of the semester.

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## **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.

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## 3 Learning Resources

### 3.1 Required Resource(s)

**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

On-line materials available at:

[http://www.aps.uoguelph.ca/ANSC\\*2340/LABS/](http://www.aps.uoguelph.ca/ANSC*2340/LABS/) or

<http://www.aps.uoguelph.ca/~swatland/HTML10234/LABS/>

Courselink will be used:

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

For lectures starting January 10, 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.

### 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.

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## 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.

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## 5 Teaching and Learning Activities

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

## 5.1 Lecture

<b>Topic(s):</b>	Overview of course
<b>Topic(s):</b>	Basic concepts of animal structure
<b>Reference(s):</b>	Textbook readings: pages 1 to 10. FOR ALL TEXTBOOK READINGS, DO NOT WORRY ABOUT "CLINICAL APPLICATION" SECTIONS
<b>Topic(s):</b>	Integument: Skin, Feathers, Horns, Hooves
<b>Reference(s):</b>	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 page 166).
<b>Topic(s):</b>	Gastrointestinal tract and Teeth:
<b>Reference(s):</b>	Textbook readings: pages 378-415 (excluding pages 398 to 402, 406-411, 414-415).
<b>Topic(s):</b>	Cardiovascular System
<b>Reference(s):</b>	Textbook readings: pages 338 to 360 (excluding sections on Abnormal Heart Sounds, Cardiac Output, Blood Circulation in the Fetus, Pulse Points, Echocardiography, and Venipuncture).
<b>Topic(s):</b>	Respiratory System
<b>Reference(s):</b>	Textbook readings: pages 361 to 372 and the section on Exchange of Gases in Alveoli (Page 374).
<b>Topic(s):</b>	Urinary System
<b>Reference(s):</b>	Textbook readings: pages 445 to 460 (excluding pages 455-458).
<b>Topic(s):</b>	Reproductive System
<b>Reference(s):</b>	Textbook readings: pages Starting from Male Reproductive System on Page 469 to 483 (excluding Ovarian Cycle), and pages 491 to 497.
<b>Topic(s):</b>	Major Bones in the Skull
<b>Reference(s):</b>	Textbook readings: pages 180 to 188.
<b>Topic(s):</b>	Organization of the Nervous System
<b>Reference(s):</b>	Textbook readings: pages 226 to 249.
<b>Topic(s):</b>	Transmission of Electrical Impulses
<b>Reference(s):</b>	Textbook readings: pages 226 to 249.
<b>Topic(s):</b>	Anatomy of the Brain
<b>Reference(s):</b>	Textbook readings: pages 226 to 249.
<b>Topic(s):</b>	Endocrine System
<b>Reference(s):</b>	Textbook readings: pages 273 to 282.
<b>Topic(s):</b>	Midterm 1

<b>Reference(s):</b>	Saturday, February 9th; 12:00 to 2:00 P.M. in RICH 2520 and 2529
<b>Topic(s):</b>	Organization of Muscle and the Myofibril
<b>Reference(s):</b>	Textbook readings: pages 210 to 213 and 217 to 222.
<b>Topic(s):</b>	Muscle Contraction
<b>Reference(s):</b>	Textbook readings: pages 210 to 213 and 217 to 222.
<b>Topic(s):</b>	Muscle Contraction continued
<b>Reference(s):</b>	Textbook readings: pages 210 to 213 and 217 to 222.
<b>Topic(s):</b>	Muscle Relaxation
<b>Reference(s):</b>	Textbook readings: pages 210 to 213 and 217 to 222.
<b>Topic(s):</b>	Energy for Muscle Contraction
<b>Reference(s):</b>	Textbook readings: pages 435 to 440.
<b>Topic(s):</b>	Winter Break
No classes	
<b>Topic(s):</b>	Conversion of Muscle to Meat I
<b>Topic(s):</b>	Conversion of Muscle to Meat II
<b>Topic(s):</b>	PSE and DFD
<b>Topic(s):</b>	PSE and DFD
<b>Topic(s):</b>	Collagen and Elastin
<b>Topic(s):</b>	Factors Affecting Meat Quality
<b>Topic(s):</b>	Structure and Roles of Adipose Tissue
<b>Reference(s):</b>	Textbook readings: pages 119-129.
<b>Topic(s):</b>	Midterm 2
<b>Reference(s):</b>	March 9th: 12:00 to 2:00 P.M. in RICH 2520 and 2529
<b>Topic(s):</b>	Fat Deposition and Types
<b>Topic(s):</b>	Organization of Bone and Bone Formation
<b>Reference(s):</b>	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
<b>Topic(s):</b>	Types of Bone and Their Function in the Body
<b>Reference(s):</b>	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
<b>Topic(s):</b>	Cartilage versus Bone

<b>Reference(s):</b>	Textbook readings: pages 173-204; 284 to 285 (the 2 small sections on calcitonin and parathyroid hormone); 126-127 on cartilage.
<b>Topic(s):</b>	Effect of Gene Mutations on Carcass and Meat Quality
<b>Topic(s):</b>	Avian Systems: Reproduction and Laying of Eggs
<b>Topic(s):</b>	Avian Systems: Comparison of Mammalian versus Avian Systems (Skeleton and Muscles)
<b>Topic(s):</b>	Carcass Grading
<b>Topic(s):</b>	Carcass Grading (Continued)
<b>Topic(s):</b>	Lecture topic to be announced
<b>Topic(s):</b>	Lecture topic to be announced
<b>Topic(s):</b>	Final Exam Wednesday, April 10th from 11:30 A.M. until 1:30 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. A lab course outline is found on CourseLink. You can access the video presentations from any personal computer with web access, or at computers in the Forshaw computer lab (ANNU 102) or 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.

### ***LINKS to access lab materials***

[http://www.aps.uoguelph.ca/ANSC\\*2340/LABS/](http://www.aps.uoguelph.ca/ANSC*2340/LABS/) or

<http://www.aps.uoguelph.ca/~swatland/HTML10234/LABS/>

The video presentations can be accessed 3 ways using personal computers:

1. A computer anywhere. The labs can be accessed using home or dorm computers with web access using the links above and the User ID and Password.  
User ID: ansc2340

Password: meat2340

The lab videos are in the Window Media Video (WMV) file format, developed by Microsoft.

Due to the wide variety of computers and operating systems used by students, it is the responsibility of individual students to set up their own computer to access the videos. One of our tech support personnel has recommended Google Chrome for viewing the videos.

2. The Library. You can also access the sites from the library. Again, you will need to use the User ID and Password previously stated. Copies can be made for personal study only and the material may not be used for any other purpose except with written permission. When viewing this material in the library, please remember the contents of this course may be very disturbing to sensitive individuals.
  
3. The Forshaw computer lab (ANNU 102). You can access the videos on computers in the Forshaw computer lab if the lab is not being used for scheduled courses. Students will need their own earphones if they want to work on their own. Start up a PC by moving the mouse. If it does not start, make sure it is turned on. Log on using the name "students". No password is needed initially. Use Microsoft Explorer. Use the address:  
"http://www.aps.uoguelph.ca/~swatland/HTML10234/LABS" - this address is case specific (in other words labs does not exist but LABS does). You will need to use a User ID and Password to gain access to the labs.

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## 6 Assessments

### 6.1 Assessment Details

#### Midterm 1 (25%)

**Date:** February 9, 2019, 12:00 to 2 P.M. in RICH 2520 and 2529

**Learning Outcome(s):** 1,3,4,6,9

#### Midterm 2 (25%)

**Date:** March 9th, 2019, 12:00 to 2 P.M. in RICH 2520 and 2529

**Learning Outcome(s):** 1,3,4,6,7,8,9

#### Final Exam (50%)

**Date:** Wed, Apr 10, 11:30 AM - , 1:30 PM, To be determined

**Learning Outcome(s):** 1,2,3,4,5,6,7,8,9

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## 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 9:30 to 10:20 P.M. A weather emergency will result in the exam being postponed and moved to the next lecture period. CSD students are encouraged to schedule their exams earlier in the day for the midterms and final so that Dr. Mandell can visit the CSD Exam Centre and ask CSD students 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.*

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## 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>

### 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 course registration are available in the Undergraduate and Graduate 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>

## 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.

More information can be found on the SAS website

<https://www.uoguelph.ca/sas>

## 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>

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