



ANSC*4260 Beef Cattle Nutrition

Winter 2020

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 2.00 - January 03, 2020

1 Course Details

1.1 Calendar Description

This course is designed for students to evaluate problems in feeding beef cattle. Relevant aspects of digestion and metabolism of nutrients as well as current issues of feeding beef cattle and diagnosing nutritional deficiencies will be included.

Pre-Requisites: ANSC*3120

1.2 Course Description

This course is designed for students to gain knowledge and address challenges in beef cattle

production. Relevant aspects of digestion, metabolism of nutrients, diagnosing nutritional deficiencies, as well as current issues feeding cows, replacement heifers, and growing and finishing cattle will be addressed in the course

1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

Lecture: M W 10:30-11:20 am in ALEX Rm 218

Lab: T 11:30-2:20 in ANNU Rm 102

Please see courselink for any room changes for specific lectures/labs

1.4 Final Exam

Date: Wed. April 15, 2020

Time: 11:30-1:30 pm

Location: TBD

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

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Katharine Wood
Email:	kwood@uoguelph.ca
Telephone:	+1-519-824-4120 x53695
Office:	ANNU 236
Office Hours:	Office hours: By appointment

2.2 Teaching Assistants

Teaching Assistant:	Vicki Brisson
Email:	vbrisson@uoguelph.ca
Office Hours:	Office hours by appointment
Teaching Assistant:	Melissa Williams
Email:	mwilli20@uoguelph.ca
Office Hours:	Office hours by appointment

3 Learning Resources

3.1 Required Resources

Required Texts (Textbook)

Required Texts:

None

Course materials will be provided on CourseLink.

3.2 Recommended Resources

Recommended Texts (Textbook)

Nutrient Requirements of Beef Cattle (NRC, 1996). SF95.N32 no. 4 can be attained on-line through the University of Guelph library. Supplementary readings also may be provided in class or via CourseLink.

Ration Balancing Program: CowBytes Beef Ration Balancer Program developed by Alberta Agriculture, Food and Rural Development will be used for ration balancing exercises. The program, which is based on National Research Council (NRC) formulas, is installed on computers in the Animal & Poultry Science Computer Lab (Room 102 ANNU).

3.3 Lab Manual

Handouts provided in lab and/or CourseLink

3.3 Other Resources

Simple calculator

A laptop computer configured to run windows based software

3.3 Additional Costs

Some labs will be field trips and require closed toe shoes to enter farms.

Costs of printing off lecture outline notes and cost of printing for assignment

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Specific Learning Outcomes:

By the end of this course students should be able to:

1. Understand the fundamentals of beef cattle production and nutrition and identify the major challenges and opportunities within this industry
1. Interpret scientific data/concepts/findings using quantitative, qualitative and analytical methods and effectively communicate (written and oral) those findings to a lay audience.
2. Understand nutritional requirements of beef cattle, identify factors influencing requirements, and demonstrate knowledge of strategies to meet these requirements.
1. Critically evaluate production practices and feeding programs in beef cattle production and make recommendations for improved production.
1. Use mathematical models to estimate TDN, feed intake, and basic nutrient requirements of cattle for growth and performance using equations and formulation software
1. Understand the impacts of diet and nutrition in animal health, performance, and disease

5 Teaching and Learning Activities

5.1 Lecture

Topics:

Lecture Content (in order of delivery):

- Structure of the Canadian Beef Industry
- Anatomy and Physiology of the bovine digestive system
- Rumen fermentation
- Fibre digestion
- Postruminal digestion
- Energy metabolism
- Protein Metabolism
- Feeds and feed processing
- Feeding and feed analysis
- Vitamin and mineral nutrition
- Cow/calf and heifer nutritional requirements
- Background cattle
- Forages and pastures
- Feedlot Nutrition
- Rumen dysfunction
- Implants and feed additives
- Alternative feeds and feeding strategies
- Meat quality and grading

There will also be a number of guest lectures in this course. All material presented in class (including those from guest lecture) is considered testable material

5.2 Field Trip

Lab Schedule:

Jan 7: No Lab

Jan 14: Field Trip - EBRC

Jan 21: Lecture/Lab- ANNU 102

Jan 28: Lecture/Feed Sheet Assignment

Feb 4: Lecture/ Fact Sheet Presentations

Feb 11: Lecture/Fact Sheet Presentations

Feb 18: READING WEEK

Feb 25: Lecture/Lab

Mar 3: Case Study Assignment Lab

Mar 10: Field Trip- TBD

Mar 17: Lecture/Lab

Mar 24: Lecture/Case Study Drop-In

Mar 31: Lecture/Case Study Drop-in

Note: All dates are tentative, please see courselink for any changes to lab schedule

Field Trips:

There may be at least one field trip (optional) in the course where we travel to a commercial beef operation. The field trip will be during a scheduled lab time. Destinations will require closed-toed shoes and may be outside in inclement weather. Please dress for the weather. Please note that in some cases we may need to travel a distance on the bus, and depending on travel conditions we may not be back to campus upon conclusion of the scheduled lab time.

Field trips are all tentative and subject to change. Please see courselink for any updates

Some lab lectures will be guest speakers and the schedule is TBD. All material presented by guest speakers is considered testable material

6 Assessments

6.1 Assessment Details

Course Assignment and Tests (0%)

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Feed Sheet Assignment	Feb 12th	10%	3,4,5
Online Quiz/Rations/ Feeds evaluations	Various (One date end of Jan, one in March)	5% (2.5% each assignment)	3,4,5
Midterm Exam	Feb 26th (in-class)	20%	1-6
Scientific Paper Factsheet and Presentation	Presentations in Lab Feb 4th and 11th FactSheet Paper due Feb 14th	15%	1,2,4
Case Study Project	Last day of classes (April 3rd)	25%	3,4,5
Final Exam	Wed. April 15, 2020 11:30- 1:30 pm Rm:TBA	25%	1-6

Additional Notes (0%)

Additional Notes:

Presentation times for the FactSheet scientific paper review assignment will be scheduled during lab time, with final paper due Feb 12th. Sign-up for presentation times will be in second week of class. Assignment details will be posted on courselink in first week of class. **Presentations will be done in pairs, however the written portion of this assignment is to be completed individually.**

The case study project may be completed individually or in pairs. Details will be provided on assignment sheet posted on Courselink the week after winter break. Students may be required to access the ANNU computer room **outside of class time** to use the Cowbytes program to complete this project. A hard copy of this assignment must be handed in for evaluation.

Online Quiz/Ration/Feed evaluations to be completed online via Courselink.

Final Exam Weighting (25%)

25%

7 Course Statements

7.1 Grading Policies

Completion of both examinations (midterm and final) and the case study assignment is required to receive credit for the course. The course will follow Undergraduate Grading Procedures found under Grades for

VIII. Undergraduate Degree regulations and Procedures in the 2017-2018 undergraduate calendar.

Exam questions will be based **ENTIRELY** on the lectures and lab materials. The format of the exam will include short and long answer questions. Students may require a basic calculator for the exams, however cellular phones will not be permitted as a calculator. SAS students are encouraged to schedule their exams earlier in the day for the midterms and final so that Dr.Wood can visit the SAS exam centre and ask SAS students if they have questions. For students who have missed an exam, we reserve the right to change the format of the exam for students who miss the scheduled midterm and final.

Course policy regarding late submission of projects/assignments: there are assigned due dates for students to hand in the major project. Marks will be deducted for late assignments with a 10%-mark reduction for every day the assignment is not handed in. Students will receive a zero for the assignment if the assignment has not been handed in within 7 days after the due date has passed, unless there are extenuating circumstances.

Any re-grading of assignments will be done by the course instructor and the whole assignment will be reassessed. Therefore the grade may increase, decrease, or stay the same, and the re-grade will be considered a final decision. Re-grading of midterm questions can be submitted to the instructor, by highlighting the question to be regraded. This must be done before the last class day. Note: only questions written in pen can be submitted for regrading.

7.2 Course Policy regarding use of electronic devices and recording of Lectures

Electronic recording of classes is expressly forbidden without consent of the instructor. **This includes photography of course materials and lecture slides.** When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

7.3 Course Policy on Group Work

Students are expected to work individually on all assignments, with the exception of the presentation of the FastSheet assignment and the case study assignment, which may be completed in pairs or as an individual. Partner conflicts must be addressed in writing to the course instructors within 24h of the due project date.

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>
