

# Course Outline Form: Winter 2018

## General Information

**Course Code:** ANSC \*4260

**Course Title:** Beef Cattle Nutrition

### **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

**Credit Weight:** 0.5

**Academic Department (or campus):** Department of Animal Biosciences

**Campus:** Guelph

**Semester Offering:** Winter 2018

### **Class Schedule and Location:**

#### **Lectures:**

<b>Day</b>	<b>Time</b>	<b>Location</b>
Monday	10:30 a.m. – 11:20 a.m.	MCKN 226
Wednesday	10:30 a.m. – 11:20 a.m.	MCKN 226
Friday	10:30 a.m. – 11:20 a.m.	MCKN 226

#### **Laboratory:**

There are no formal laboratory sections for this course.

However throughout the course laboratory sessions will be held in lieu of lecture:  
All updates on lab dates and times will be announced on Courselink and in class.

- Rumen GIT physiology lab
- Ration sheet lab
- Cowbytes formulation lab

## **Instructor Information**

Instructor Name: Dr. Katie Wood

Instructor Email: [kwood@uoguelph.ca](mailto:kwood@uoguelph.ca)

Instructor Phone and Extension: 519-824-4120 extension: 53695

Office location and office hours: by appointment.

## **GTA Information**

GTA Name: Madeline Collins

GTA Email: [mcolli07@mail.uoguelph.ca](mailto:mcolli07@mail.uoguelph.ca)

GTA office location and office hours: By appointment only.

## **Course Content**

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

### **Lecture Content:**

- Structure of the Canadian Beef Industry
- Anatomy and Physiology of the bovine digestive system

- Rumen fermentation
- Fibre digestion
- Post-ruminal 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

#### **Course Assignments and Tests:**

<b>Assignment or Test</b>	<b>Due Date</b>	<b>Contribution to Final Mark (%)</b>	<b>Learning Outcomes Assessed</b>
Feed Sheet Assignment	Feb 16th	10%	3,4,5
Online Rations/ Feeds evaluations	Various (One date end of Jan, one in March)	5% (2.5% each assignment)	3,4,5
Midterm Exam	Feb 26 <sup>th</sup> (in-class)	20%	1-6
Scientific Paper Factsheet and Presentation	Various dates throughout the semester	15%	1,2,4
Case Study Project	Last day of classes	25%	3,4,5
Final Exam	April 13, 2018 2:30-4:30	25%	1-6

### **Additional Notes:**

Presentation times for the scientific paper review assignment will be scheduled outside of class time following winter break. Further details will be provided on the assignment details sheet to be posted prior to winter break.

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

Online Ration/feed evaluations to be completed on Courselink.

**Final examination date and time:** Friday April 13, 2017 at 2:30 p.m. to 4:30 p.m.

### **Final exam weighting:**

25%

### **Course Resources**

#### **Required Texts:**

None

Course materials will be provided on CourseLink.

#### **Recommended Texts:**

*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).

**Lab Manual:** Handouts provided in lab.

**Other Resources:** Simple calculator

## **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 replace the lecture on the given date. This will depend on the availability of students before/after the designated lecture times. An Alternative option is a Saturday field trip.

**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

## **Course Policies**

### **Grading Policies:**

Completion of both examinations (midterm and final) 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 5%-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.

### **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. 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.

### **Course Policy on Group Work:**

Students are expected to work individually on all assignments, with the exception of the case study, 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.

## **University Policies**

### **Academic Consideration:**

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

### **Academic Misconduct:**

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.

Detailed information regarding the Academic Misconduct policy is available in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

**Accessibility:**

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email [sas@uoguelph.ca](mailto:sas@uoguelph.ca) or visit the [Student Accessibility Services website \(http://www.uoguelph.ca/csd/\)](http://www.uoguelph.ca/csd/).

**Course Evaluation Information:**

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the [Course and Instructor Evaluation Website](#) for more information.

**Drop period:**

The drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in [Section III \(Schedule of Dates\) of the Undergraduate Calendar](#).

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).