



University of Manitoba
Faculty of Agricultural and Food Sciences
Department of Animal Science



ANSC 0420 Animal Biology and Nutrition

Course Outline

Fall 2021

COURSE DETAILS

Course Number & Title: ANSC 0420 Animal Biology & Nutrition

Number of Credit Hours: 4

Class Times & Location: 8:30 – 9:20 AM Monday, Wednesday and Friday
Online

Lab Times & Location: Tues (B03) 2:30 – 3:45, Wed (B01) 1:30 – 2:45 Thurs. (B01) 2:30 – 3:45
Online

Pre-Requisites: None

Instructor Contact Information

Instructor: **George Nhamo Gozho**
Office: 226 Animal Science Bldg.
Office Hours: No set time or hours. You can e-mail the instructor to set up a time for a call

e-mail: George.Gozho@umanitoba.ca

Student support: Control-click on any of the following items to open the URL with further [Responsibilities of Academic Staff with Regard to Students](#) (ROASS) [Final Examination and Final Grades Policy](#) [Student Advocacy Office Policy](#) Student [Academic](#) and [Non-Academic](#) Misconduct Policies [Student Discipline Appeal Procedure](#)

All email communication must conform to the University of Manitoba's [Electronic Communications with Students](#) policy. Students are required to obtain and use their UManitoba email account for all communication between themselves and the university.

I will reply to email and phone messages within 48 hours during the academic term, Monday through Friday. Use the subject line to state the reason for your e-mail to expedite responses where urgency is appropriate.

General Course Information

How to use this syllabus: Refer regularly to the course outline because it is meant to contain most of the relevant information about the course. However, if you have any questions even after consulting the course syllabus please contact the instructor for clarification or answers as needed.

Course Description: "An introduction to animal structure and function. Genetics, growth and reproduction will be related to animal production. Further, the digestive systems of various livestock species will be studied and related to the types of feedstuffs that each species can utilize. The general function on nutrients within animals will also be discussed. Nutrient content of feedstuffs and application to nutrient requirements will be discussed."

The following is a proposed course schedule with approximate dates, though these are subject to change at the discretion of the instructor and/or as the learning needs of students evolve. Any such changes are subject to Section 2.8 of the ROASS Procedure.

ANSC 0420 Animal Biology and Nutrition

Date	Day	Lecture material	Lab /tutorials
Sept 13	M	Introduction	
Sept 15	W	Genetics	
Sept 17	F	Genetics	
Sept 20	M	Genetics	
Sept 22	W	Genetics	Genetics Lab (21, 22, 23)
Sept 24	F	Growth	
Sept 27	M	Growth	
Sept 29	W	Growth	Carcass grading (28, 29, 30)
Oct 1	F	Term Test 1	
Oct 4	M	Reproduction	
Oct 6	W	Reproduction	Reproductive systems lab (Oct 5, 6,7)
Oct 8	F	Reproduction	
Oct 11	M	NO CLASS (Thanksgiving)	
Oct 13	W	NO CLASS (Experiential learning)	
Oct 15	F	NO CLASS (Experiential learning)	
Oct 18	M	Egg Production	Egg grading lab (Oct 19, 20, 21)
Oct 20	W	Lactation	
Oct 22	F	Lactation	
Oct 25	M	Term Test 2	
Oct 27	W	Digestive System	
Oct 29	F	Digestive System	
Nov 1	M	Digestive system	Digestive Systems (Nov 2, 3, 4)
Nov 3	W	Nutrient Classes	
Nov 5	F	Energy Systems	
Nov 8	M	NO CLASS (Mid term break)	
Nov 10	W	NO CLASS (Mid term break)	
Nov 12	F	NO CLASS (Mid term break)	
Nov 15	M	Carbohydrates	
Nov 17	W	Carbohydrates	Diet formulation lab (Nov 16, 17, 18)
Nov 19	F	Carbohydrates	
Nov 22	M	Lipids	
Nov 24	W	Lipids	
Nov 26	F	Term Test 3	
Nov 29	M	Proteins	
Dec 1	W	Proteins	
Dec 3	F	Minerals	
Dec 6	M	Vitamins	
Dec 8	W	Water	
Dec 10	F	Review	

Important Dates:

September 28	Last day to drop classes without penalty
September 29	Last day to register /Registration revision deadline
November 22	Voluntary Withdrawal deadline
December 11 – 23	Exam period for Agriculture Diploma Classes

Intended Learning Outcomes

Upon completion of this course, students should:

- Display a knowledge of Mendelian genetics by predicting the outcome of matings for single gene traits.
- Understand the importance of heritability of traits in determining the change from generation to generation when making genetic selections.
- Explain why heterosis (hybrid vigor) occurs with cross breeding.
- Know the percent mature weight at which animal is marketed, bred etc.
- Demonstrate a knowledge of how factors like age, sex, frame size, and nutrition influence the carcass composition of an animal.
- List the main factors involved in the grading of carcasses in Canada.
- Name and label on a diagram the main parts of the male and female reproductive organs. Be able to list the main functions of each of these parts.
- List factors that are used in evaluating the breeding soundness of the male and discuss some factors that may influence that evaluation.
- Describe the estrous cycle in terms of steroid, pituitary and uterine hormone changes as well as changes on the surface of the ovary and changes in animal behavior.
- Give examples of reproductive technologies that rely on our knowledge of the estrous cycle.
- Briefly describe the placenta and the stages of parturition.
- Define and describe the essential features of colostrum.
- Label a milk curve for dairy cows.
- Describe several metabolic disorders in dairy cattle and some methods to reduce the incidence of these disorders.
- Label diagrams of an egg and the oviduct of a bird.
- Describe the formation of an egg as it passes through the oviduct.
- Describe features of the egg that are used in egg grading.
- Label diagrams of digestive tracts from pigs, poultry and ruminants.
- Understand the major nutrient requirements for various livestock species.
- Understand where in the digestive tract each nutrient is digested and the end-product that is produced by this digestive process.
- List common sources of various nutrients.
- Indicate the value of processing on feed digestion, preservation etc.
- Calculate a simple diet to meet the animal's nutrient requirements.

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Recording Class Lectures

The University of Manitoba holds copyright over the course materials, presentations, lectures and labs which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission from the instructor. Course materials (both paper and digital) are for the participant's private study and research only.

Textbook, Readings, Materials

There is no assigned textbook for this course. All course information, assignments and readings will be provided to students either in class or through UM Learn.

Course Technology

On-line course information: Course information is available for students to access through UM Learn. To access the UM Learn site, log in using your UMNNetID to:

<https://universityofmanitoba.desire2learn.com/d2l/login>. Click on this course name to gain access to course content (note A designates the lecture, B designates the lab).

Short in-class Quizzes will be given during each lecture through the polling function in UMZoom. Each short quiz will be a short review of the previous lecture

Attendance/Participation

From the University of Manitoba Academic Calendar:

You are encouraged to attend all lectures in order to succeed in this course. An attendance record will be available through the polls taken during each lecture.

Regular attendance and active participation are requirements for this course.

Missed Exams: Students will not be allowed to make up a missed exam except under exceptional circumstances. Students who miss a test must contact the Instructor and immediately with documentation of a valid reason and to make alternate arrangements.

Late assignments: Assignments will be devalued by 25% for each day that they are late to a maximum of 50% (maximum 48 hrs overdue). Passed this time, assignments will not be accepted.

Student Responsibilities

- Attend all classes (lectures and labs) and actively participate in learning activities
- Regularly access ANSC 0420 A01 UM Learn site and University of Manitoba student e-mail to access course information
- Seek clarification from Instructor regarding the contents of this course outline if required
- Be aware of and comply with [University of Manitoba Policies and Procedures](#)
- Listen attentively and do not disturb others during class
- Use professional, clear communication when e-mailing instructors and classmates
- Serve as good ambassadors for the Agriculture Diploma program and the Agricultural Community

See [Respectful Work and Learning Environment Policy](#).

Academic Integrity:

All course work is to be completed individually for this course, unless you are specifically asked to collaborate with classmates. Inappropriate collaboration will be monitored by instructors and graders on all work submitted within the course. All course work submitted must be created specifically for this course by the student whose name is on the work.

Group or Team projects are also subject to the same rules of academic integrity.

Please refer to the University of Manitoba guidelines on [Cheating, Plagiarism and Fraud](#).

Expectations: You Can Expect The Instructor To

- Support students in meeting their individual learning goals
- Provide opportunities for students to learn in a safe environment

- Meet with students to clarify course content or assist with learning activities outside of class hours (please use posted office hours OR e-mail your request and suggested meeting time to instructor)

Course Evaluation Methods

Test 1	20% of final grade
Test 2	20% of final grade
Test 3	20% of final grade
Lab Assignments	10% of final grade
Class attendance Quizzes	5% of final grade
Final exam	25% of final grade

Grading

The grading scale for the course is given below:

Letter Grade	%	Grade Point Range	Final Grade Point
A+	91-100	4.25-4.5	4.5
A	84-90	3.75-4.24	4.0
B+	77-83	3.25-3.74	3.5
B	70-76	2.75-3.24	3.0
C+	65-69	2.25-2.74	2.5
C	60-64	2.0-2.24	2.0
D	50-59	Less than 2.0	1.0
F	Less than 50		0