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

ANSC 0420 Animal Biology and Nutrition

Course Outline

Fall 2024

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**
In EITC E2 155

Lab Times & Location: **Tuesday** (B03) at 2:30 – 3:45 **220 Animal science**
Wednesday (B01) at 1:30 – 2:45 in **220 Animal science**
Thursday (B02) at 2:30 – 3:45 in **220 Animal science**

Pre-Requisites: None

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

Instructor Contact Information

Instructor(s) Name & Preferred Form of Address:	**George Nhamo Gozho, Ph.D.** Preferred to be addressed as **George** (pronouns: he/him/his) or Dr. Gozho, whichever you are comfortable with.
Office Hours	There is no set time or hours. Feel free to drop in to see if I am free. You can call the office to confirm before you come.
Office Location	Office: 226 Animal Science Bldg.
Telephone:	204-474-9443
Email:	George.Gozho@umanitoba.ca
Preferred Method of Communication	I prefer in-person communication to all other forms of communication. From Monday to Friday, give 48 hours for an e-mail response. If you must e-mail, allow a reasonable time between sending your e-mail and when you will likely get a response. I will reply to e-mails received after 5:30 p.m. on Friday of the following week
TA **Office Location** **Email:**	Shengnan Li, (Ph.D. Candidate) 145 E Animal Science Building lis7@myumanitoba.ca
Student support:	Control-click on any of the following items to download the relevant documents: 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 **The University of Manitoba Accessibility Policy** **University Health Services Policy**

General Course Information

How to use this syllabus: Refer regularly to the course outline, which 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 get in touch with me 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 the types of feedstuffs that each species can utilize will be related to the anatomy of the gut. The general function of 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 my discretion as your learning needs evolve. Any such changes are subject to Section 2.8 of the ROASS Procedure.

Date	Day	Lecture material	Lab /tutorials
Sept 9	M	Introduction	No labs (Sept 10, 11, 12)
Sept 11	W	Genetics	
Sept 13	F	Genetics	
Sept 16	M	Genetics	Genetics Lab/ exercise (Sept 17,18,19)
Sept 18	**W**	Genetics	
Sept 20	**F**	Growth	
Sept 23	**M**	Growth	Carcass grading (Sept 24,25, 26)
Sept 25	**W**	Growth	
Sept 27	F	Growth	
Sep 30	**M**	**No classes on National Day for Truth and Reconciliation**	
Oct 2	**W**	**Test 1** *(Genetics and Growth sections*	
Oct 4	**F**	Reproduction	
Oct 7	**M**	Reproduction	Reproductive Systems (Oct 8, 9, 10)
Oct 9	**W**	Reproduction	
Oct 11	**F**	Egg Production	
Oct 14	**M**	**Holiday Thanksgiving Day**	
Oct 16	**W**	**NO CLASS (Experiential learning)**	
Oct 18	**F**	**NO CLASS (Experiential learning)**	
Oct 21	**M**	Lactation	Egg Quality (Oct 22, 23, 24)
Oct 23	**W**	Lactation	
Oct 25	**F**	Lactation	
Oct 28	**M**	Digestion	
Oct 30	**W**	Digestion	
Nov 1	**F**	**Test 2** *(Reprodn, Egg prodn, Lactation)*	
Nov 4	**M**	Digestion	Digestive Systems Nov 5, 6, 7)
Nov 6	**W**	Digestion	
Nov 8	**F**	Digestion	
Nov 11	**M**	**Remembrance Day**	
Nov 13	**W**	Midterm Break	
Nov 15	**F**	Midterm Break	
Nov 18	**M**	**Test 3** *(Digestion)*	
Nov 20	**W**	Nutrient classes	
Nov 22	**F**	Energy systems	
Nov 25	**M**	Carbohydrates	Diet formulation (Nov 21, 22, 23)
Nov 27	**W**	Carbohydrates	
Nov 29	**F**	Proteins	
Dec 2	**M**	Minerals	
Dec 4	**M**	Vitamins	
Dec 6	**W**	Water	

Important Dates

September 19	Last day to drop classes without penalty
September 20	Last day to register /Registration revision deadline
October 2	Test 1
November 1	Test 2
November 19	Voluntary Withdrawal deadline
November 18	Test 3
December 9 – 19	Exam period for Agriculture Diploma Classes

Course Learning Outcomes

Upon completion of this course, students should:

- Display knowledge of Mendelian genetics by predicting the outcome of matings for single gene traits.
- Understand the importance of the 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 the 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 the main parts of the male and female reproductive organs on a diagram. List the main functions of each of these parts.
- List factors 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, changes on the ovary's surface, 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 each nutrient is digested in the digestive tract and the end product produced by this digestive process.
- List common sources of various nutrients.
- Indicate the value of processing for feed digestion, preservation, etc.
- Calculate a simple diet to meet the animal’s nutrient requirements.

Using Copyrighted Material

Please respect copyright. The course content is appropriately acknowledged and is copied following copyright laws and University guidelines. Copyrighted works, including those I created, are made available for private study and research and **must not** be distributed in any format without permission.

Recording Class Lectures

I, the Instructor, hold copyright over the course materials, presentations, lectures, and labs that 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 my permission. Course materials (both paper and digital) are for your private study and research only.

Textbook, Readings, Materials

There is no assigned textbook for this course. Students will receive all course information, assignments, and readings in class or through UM Learn.

Course Technology

Online course information: Course information is available for students to access through UM Learn. To access the UM Learn site, log in using your UMNetID to: https://universityofmanitoba.desire2learn.com/d2l/login. Click on this course name to access course content (note A designates the lecture, B designates the lab).

What I expect from you:

Regular attendance and active participation are required for success in this course. Class participation will be evaluated using in-class iClicker quizzes. iClickers will also be used to take attendance. It is important to arrive early to ensure you are not marked absent.

iClickers or the iClicker Reef app will be used to answer questions during class to earn participation marks. The mark breakdown will be as follows:

For answering each question, giving an incorrect response 0

For each correct answer ,1

Missed or Late Labs and missed Exams:

Notify me if, for medical reasons, you must be absent from class or lab or if you are going to submit an assignment late. NOTE: It is your responsibility to communicate with me well in advance of assignment due dates, of any ongoing issues, OR immediately once an issue arises that may impact your ability to complete course work, including tests.

Also, it is your responsibility to communicate with me well before test/exam/ assignment due dates if any ongoing technology and other issues may impact your ability to complete coursework.

In-person lab attendance is mandatory (there are no makeup labs). If absent without documentation of a compelling personal matter, 100% of the mark allocated to a lab will be deducted. Students are not allowed to hand over lab reports without attending the lab**.** Students cannot make up a missed exam except under exceptional circumstances. Students who miss a test must immediately contact me with documentation of a valid reason and make alternate arrangements.

Medical notes are not required for illnesses. The U of M implemented a new policy called "Self-Declaration for Brief and Temporary Student Absences." This page provides information about how this policy applies to students, answers some commonly asked questions, and provides the self-declaration form. Please inform me as soon as possible if you will miss a class due to illness. Also, familiarize yourself with the policy as stated in the following:
Self declaration for brief or temporary student absences policy

Student Responsibilities

- Attend all classes (lectures and labs) and actively participate in learning activities
- Regularly access the ANSC 0420 A01 UM Learn site, and your University of Manitoba student email is required to access course information
- Seek clarification from me 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 emailing me or your classmates
- Serve as good ambassadors for the Agriculture Diploma program and the Agricultural Community

See Respectful Work and Learning Environment Policy.

Academic Integrity:

All coursework 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 coursework 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 me to:

- Support you to meet your individual learning goals
- Provide opportunities for you to learn in a safe environment
- Meet with you to clarify course content or assist with learning activities outside class hours (individual coaching).
- Make myself accessible to you
- Provide feedback on assignments and tests within one week of submission

Course Evaluation Methods

Test 1	18% of final grade
Test 2	18% of final grade
Test 3	18% of final grade
Lab Assignments	15% of final grade
Participation	11% of final grade
Final exam	20% 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