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

ANSC 0420 Animal Biology and Nutrition

Course Outline

Fall 2023

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 110

Lab Times & Location: **Tuesday** (B03) at 2:30 – 3:45 in **134 Agriculture**
Wednesday (B01) at 1:30 – 2:45 in **343 Agriculture**
Thursday (B02) at 1:30 – 2:45 in 343 Agriculture

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)
Office Location: **Telephone:**	Office: 226 Animal Science Bldg. Office Hours: No set time or hours. You can consult my calendar and email me to set up a time for an appointment. 204 – 474-9443
Email:	George.Gozho@umanitoba.ca The university expects students to conduct all email communication using the official University of Manitoba student email address. I will reply to emails and phone messages within 48 hours during the academic term, Monday through Friday. Use the subject line to state the reason for your email to expedite responses where urgency is appropriate**.** Additionally, include the course that that the e-mail is in reference to. Communication in person before or immediately after class is preferred form of communication. However, e-mail is also acceptable.
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 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 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 related to the types of feedstuffs that each species can utilize. 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 11	M	Introduction	Introduction to labs (Sept 12, 13, 14)
Sept 13	W	Genetics	
Sept 15	F	Genetics	
Sept 18	M	Genetics	No Lab (Sept 19, 20, 21)
Sept 20	**W**	Genetics	
Sept 22	**F**	Growth	
Sept 25	**M**	Growth	Genetics (Sept 26, 27, 28)
Sept 27	**W**	Growth	
Sept 29	**F**	Reproduction	
Oct 2	**M**	**No classes National Day for Truth and Reconciliation**	Carcass grading (Oct 3, 4, 5)
Oct 4	**W**	Reproduction	
Oct 6	**F**	**Test 1** *(Genetics and Growth sections)*	
Oct 9	**M**	**Holiday Thanksgiving**	No lab (No classes) (Oct 10, 11, 12)
Oct 11	**W**	**NO CLASS (Experiential learning)**	
Oct 13	**F**	**NO CLASS (Experiential learning)**	
Oct 16	**M**	Reproduction	Reproductive systems (Oct 17, 18, 19)
Oct 18	**W**	Reproduction	
Oct 20	**F**	Egg Production	
Oct 23	**M**	Lactation	Egg Quality (Oct 24, 25, 26)
Oct 25	**W**	Lactation	
Oct 27	**F**	Lactation	
Oct 30	**M**	**Test 2** *(Reprodn, Egg prodn, Lactation)*	No lab (Oct 31 Nov 1, 2)
Nov 1	**W**	Digestion	
Nov 3	**F**	Digestion	
Nov 6	**M**	Digestion	Digestive systems (Nov 7, 8, 9)
Nov 8	**W**	Nutrient classes	
Nov 10	**F**	Enenerg systems	
Nov 13	**M**	**Midterm break**	No labs (Nov 14, 15, 16)
Nov 15	**W**	**Midterm break**	
Nov 17	**F**	**Midterm break**	
Nov 20	**M**	Carbohydrates	Energetics (Nov 21, 22, 23)
Nov 22	**W**	Carbohydrates	
Nov 24	**F**	**Test 3** Digestion, Nutrients, Energy sys.	
Nov 27	**M**	Lipids	Diet formulation (Nov 28, 29, 30)
Nov 29	**W**	Proteins	
Dec 1	**F**	Proteins	

Date	Day	Lecture material	Lab /tutorials
Dec 4	**M**	Minerals	TBA (Dec 5,6,7)
Dec 6	**W**	Vitamins	
Dec 8	**F**	Water	

Important Dates

September 21	Last day to drop classes without penalty
September 22	Last day to register /Registration revision deadline
October 6	Test 1
October 30	Test 2
November 21	Voluntary Withdrawal deadline
November 24	Test 3
December 12 – 22	Exam period for Agriculture Diploma Classes

Course 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.

Using Copyrighted Material

Please respect copyright. The course content is appropriately acknowledged and is copied in accordance with copyright laws and University guidelines. Copyrighted works, including those created by myself, 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 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 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. All course information, assignments and readings will be provided to students 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 UMNetID 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).

What I expect from you:

Regular attendance and active participation are requirements for this course. Class participation will be evaluated by means of in-class iClicker quizzes. iClickers will also be used to

take attendance. It is important to arrive early in order to ensure that 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	- 0.5
For each correct answer	- 1.5

Each correct answer will earn you 2 points.
Suppose you get all answers wrong from 5 iClicker questions; that earns you 2.5 participation points. If you get all five questions correct, that makes you 10 points

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 your 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 in advance of tests/ exams/ assignment due dates, of any ongoing technology issues, OR immediately once an issue arises that may impact your ability to complete course work.

In-person lab attendance is mandatory (there are no makeup labs). 100% of the mark allocated to a lab will be deducted if absent without documentation of a compelling personal matter. Students are not allowed to hand over lab reports without attending the lab**.** Students will not be allowed to 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 and answer some commonly asked questions, as well as the self-declaration form. Please inform me as soon as possible if you will be missing a class due to illness. Also, familiarize yourself with the policy as is stated in:
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 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 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 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 – you can search for my outlook calendar listing and see when I am available to meet with 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	10% of final grade
Attendance	5% 0f 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