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

ANSC 0420 Animal Biology and Nutrition

Course Outline

Fall 2019

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 Room 172 Agriculture
Lab Times & Location:	12:30-1:45 PM Monday (B03), Wednesday (B02), or Friday (B01) Room 219 Animal Science EXCEPT reproductive and anatomy tract labs, to be held in Room 142 Animal Science
Pre-Requisites:	None

Instructor Contact Information

Instructor: **George Nhamo Gozho**
Office: 226 Animal Science Bldg.
Office Hours: Open door policy
Phone: 204-474-9443
e-mail: George.Gozho@umanitoba.ca

Student support:

Justin Bouchard, Diploma Academic Advisor
160 Agriculture Bldg.
Phone: 204-474-8269
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Responsibilities of Academic Staff with Regard to Students (ROASS)
Final Examination and Final Grades Policy
Respectful Work and Learning Environment Policy
Sexual Assault 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

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.
Instructor 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: Students are expected to refer regularly to this document that communicates the roles and responsibilities of students and the instructor, course schedule, and the student requirements for successful completion of the course. Students are expected to request clarification as needed and comply with the University Policies contained within.

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.

A short quiz will be held *approximately* one to two weeks prior to the midterm and final exams. These quizzes will be completed through UM Learn, either in labs or at home (TBD based on student learning objectives).

Date	Day	Lecture material	Lab
Sept 20	F	Introduction	NO LAB
Sept 23	M	Genetics	
Sept 25	W	Genetics	Genetics lab
Sept 27	F	Genetics	
Sept 30	**M**	Growth	
Oct 2	**W**	Growth	Carcass grading lab
Oct 4	**F**	Growth	
Oct 7	**M**	Reproduction	Male reproductive system
Oct 9	**W**	Reproduction	
Oct 11	**F**	Reproduction	
Oct 14	**M**	**NO CLASS**	
Oct 16	**W**	**NO CLASS**	
Oct 18	**F**	**NO CLASS**	
Oct 21	**M**	Reproduction/Lactation	Female reproductive tract lab
Oct 23	**W**	Lactation	
Oct 25	**F**	Lactation	
Oct 28	**M**	Egg production	
Oct 30	**W**	Digestive	Egg grading lab
Nov 1	**F**	**MIDTERM EXAM**	
Nov 4	**M**	Digestive	
Nov 6	**W**	Digestive	Digestive tract lab
Nov 8	**F**	Energy	
Nov 11	**M**	**NO CLASS**	
Nov 13	**W**	Carbohydrates	No lab
Nov 15	**F**	Carbohydrates	
Nov 18	**M**	Carbohydrates	
Nov 20	**W**	Lipids	Feed processing lab
Nov 22	**F**	Lipids	
Nov 25	**M**	Proteins	
Nov 27	**W**	Proteins	Diet formulation lab
Nov 29	**F**	Minerals	
Dec 2	**M**	Vitamins	
Dec 4	**W**	Water	No lab
Dec 6	**F**	Review	

Important Dates:

October 2	Last day to drop classes without penalty
October 3	Last day to register for fall term and spanned classes
November 11	Limited Access term expiry date for Winter 2019
December 9 – 18	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 vigour) 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 behaviour.
- 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 important 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 the Academic Team, are made available for private study and research and must not

be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the *Copyright Act* applies or written permission has been confirmed. For more information, see the University's Copyright Office website at http://umanitoba.ca/copyright/ or contact um_copyright@umanitoba.ca.

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.

Further clarification may be sought through these textbooks during instructor's office hours:

- **Bearden, H. J., Fuguay, J. W and Willard, S. T. 2004.** Applied Animal Reproduction, 6th edition. Pearson Prentice Hall. Upper Saddle River, NJ.
- **Bourdon, R. M. 2000.** Understanding animal breeding, 2nd edition. Pearson Prentice Hall. Upper Saddle River, NJ.
- **Cheeke, P. R. 2005.** Applied Animal Nutrition, 3rd edition. Pearson Prentice Hall. Upper Saddle River, NJ.
- **Senger, P. L. 2012.** Pathways to pregnancy and parturition, 3rd edition. Current Conceptions, Inc. Redmond, OR.

Course Technology

iClickers: Students can use an **iClicker, or the iClicker Reef app** for answering questions during lecture and lab throughout the duration of the course.

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).

Cell phones and lap top computers: It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use technology in classroom setting only for educational purposes approved by

instructor and/or the University of Manitoba Student Accessibility Services. Student should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) or gaming during scheduled class time.

If a student is on call (emergency) the student should switch his/her cell phone to vibrate mode and leave the classroom before using it.

Attendance/Participation

From the University of Manitoba Academic Calendar:

"Regular attendance is expected of all students in the course. An instructor may initiate procedures to debar a student from attending classes and from final examinations and/or from receiving credit where unexcused absences exceed those permitted by faculty or school regulations. A student may be debarred from class, laboratories, and examinations by action of the dean/director for persistent non-attendance, failure to produce assignments to the satisfaction of the instructor, and/or unsafe clinical practice or practicum. Students so debarred will have failed that course."

Regular attendance and active participation are requirements for this course. **Students are required to attend 80% of the scheduled labs and lectures.** Students who do not meet the following attendance requirements may, after written warning, be debarred from taking the final examination. Any student so debarred will receive a grade of F in the 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 Justin Bouchard 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
- Refrain from using cell phones and other communication devices 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 one – November 1	**30% of final grade**
Two quizzes (5% each)	**10% of final grade**
Lab Assignments	**25% of final grade**
Final exam – Date TBD by Registrar's Office	**30% of final grade**
Class attendance/participation	**5% of final grade**

For the class attendance/participation portion, students will be evaluated based on their iClicker responses:
5/5 – 100% attendance and iClicker questions answered
4/5 - 95- 99% attendance and iClicker questions answered
3/5 – 90-94% attendance and iClicker questions answered
2/5 – 85-90% attendance and iClicker questions answered
1/5 – 80-84% attendance and iClicker questions answered
0/5 – less than 80% attendance and iClicker questions answered