



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

ANSC 4540 MONOGASTRIC PRODUCTION SYSTEMS

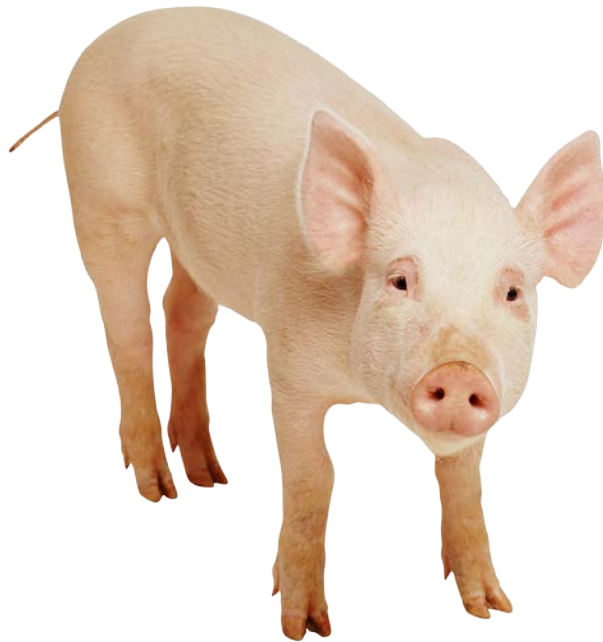


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COURSE DETAILS

Course Title & Number:	ANSC 4540 Syllabus
Number of Credit Hours:	3.0
Class Times & Days of Week:	12:30 – 1:20 pm on Monday, Wednesday and Friday
Location for classes	107 Animal Science Building
Location for labs/tutorials:	107 Animal Science Building or as scheduled
Pre-Requisites:	ANSC 2500

Instructor Contact Information

Instructor(s) Name:	Dr. C.M. Nyachoti	Dr. G.N. Gozho
Preferred Form of Address	Dr. Nyachoti	Dr. Gozho
Office Location:	224 Animal Science Building	226 Animal Science Building
Office Phone No.	Phone: 204 474-7323	Phone: 204 474-9443
Email	Martin.Nyachoti@umanitoba.ca	George.Gozho@umanitoba.ca
	<p>All email communication must conform to the Communicating with Students university policy. (Please familiarize yourself with the policy). Use the subject line to state the reason for your e-mail and add the course number. This will help to expeditiously determine which e-mails may need a quick response. Please avoid salutations such as 'Hey You' or 'Hi There'. Dear Dr. Nyachoti or Dear Dr. Gozho will be fine. Email response may take up to 36 hours. If you send an email on Friday afternoon or over the weekend you will most likely get a response no earlier than the following Monday.</p>	
Office Hours or Availability:	Generally, open door policy but best to schedule an appointment	
Contact:	Students are encouraged to come to the office, or approach the instructors immediately before or after the lecture. Use email communication only when absolutely necessary. Students are also welcome to phone the office.	

Course Description

ANSC 0690 Swine Production and Management

This course describes the swine industry in terms of the types of swine enterprises and factors affecting profitability of production. Aspects that include application of principles of nutrition, genetics and physiology in the management of swine will be covered. Prerequisite: ANSC 0420 (or 035.042) or equivalent.

ANSC 4540 Monogastric Production systems

Describes the swine industry in terms of size, complexity and relationship to the economy and gives an understanding of the breeding, feeding, management and marketing practices in a modern production unit. It also outlines other monogastric production systems of relevance to the agriculture industry. Open only to students holding at least 60 credit hours. Prerequisite: ANSC 2500 (or 035.250).

General Course Information

The swine industry is an important sector in Manitoba. It requires the engagement of people with the relevant training, knowledge and skills in order to contribute to the economy of the province. This course offers an opportunity for training to those who aspire to work directly in the swine industry, or related industries such as the feed industry.

Course Goals

The objectives of the courses are:

- a) To introduce students to the basic principles and practical skills in monogastric production systems with special reference to swine production and management.
- b) List and explain the management practices used in modern pork production.
- c) Discuss these management practices in relation to their impact on the profitability of swine and other monogastric production systems.
- d) To develop critical thinking skills so that students can make management decisions based on science-based animal husbandry principles.

Intended Learning Outcomes

At the end of the course, students will be able to:

- a) Describe the structure of the swine industry in Manitoba and Canada.
- b) Understand the various inputs, components, and sale and marketing of Canadian pork products.
- c) Analyze the issues that face the Canadian swine industry and its socio-economic role to Canada.
- d) Identify factors that influence performance of pigs in different classes.
- e) Apply the skills and knowledge gained from this course to evaluate existing swine enterprises and offer solutions to solve management problems and improve profitability.
- f) Develop ability to formulate simple swine diets.

Using Copyrighted Material

Please respect copyright. The content used in this course is appropriately acknowledged and is copied in accordance with copyright laws and University guidelines. Copyrighted works, including those created by the instructors, are made available for private study and research and must not be distributed in any format without permission.

Recording Class Lectures

The instructors of the course allow no audio or video recording of lectures or presentations in any format, openly or surreptitiously, in whole or in part without permission. Course materials (both paper and digital) are for the participants' private study and research.

Textbook, Readings, Materials

Course Materials

McGlone, J. & Pond, W. Pig Production: Biological Principles & Applications, 2003. Thomson Delmar Learning

Whittemore, C. The Science and Practice of Pig Production. 2nd Ed. 1998. Blackwell Scientific. Close, W.H., and Cole, D.J.A. 2000. Nutrition of Sows and Boars. Nottingham University Press, Nottingham, UK.

Patience, J. F. (Ed). Feed efficiency in swine, 2012. ISBN: 978-90-8686-756-1 (Online)

Lee Chiba Sustainable swine nutrition, 2013. Wiley InterScience (Online service)

Mavromichalis, I: Applied nutrition for young pigs, 2006. Wallingford, UK Cambridge, MA CABI

National Research Council. Nutrient requirements of swine, 2012. 11th ed. Washington, D.C. Nat. Academies Press

Varley, M.A., Wiseman, J. The weaner pig: nutrition and management, 2001. Wallingford, UK, CABI

Kyriazakis, I. & Whittemore, C.T. The Science & Practice of Pig Production 2006. 2nd Ed. Ames, Iowa Blackwell Pub.

Other publications:

The Canadian Swine Forum

Canadian Hog Journal

Manitoba Pork Council publications

Manitoba Swine Seminar, Banff Pork Seminar, etc.

Students who are registered in ANSC 4540 will also be expected to consult peer reviewed scientific journal articles in addition to the above.

Course Technology

Lecture notes will be posted on UMLearn and students are encouraged to download and print a copy that they bring to class. 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) online and offline “gaming” during scheduled class time. If you are expecting to receive an important call (emergency) switch your cell phone onto vibrate mode and leave the classroom before using it.

Class Communication

The University requires all students to activate an official University email account. For full details of the Electronic Communication with Students please visit:

http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf

Please note that all communication between you as a student and the instructors of the course must comply with the electronic communication with student policy

(http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html). You are required to obtain and use your U of M email account for all communication between yourself and the university.

Expectations: I expect you to:

I expect you to:

- a) Attend class on time so we start on time.
- b) Ask for help when you need assistance.
- c) Submit your own work for individual assignments and to work together in a team for group assigned projects.
- d) To act in a civil, respectful, and responsible manner toward all members of the U of M community.
- e) I will treat you with respect and would appreciate the same courtesy in return. See [Respectful Work and Learning Environment Policy](#).

Academic Integrity:

Group and individual assignments are expected as part of fulfilling the requirements of this course.

- (i) Group projects are subject to the rules of academic dishonesty;
- (ii) Group members must ensure that a group project adheres to the principles of academic integrity.
- (iii) Group assignments are meant to help develop an appreciation of team work in addition to academic knowledge and skills, therefore, complaints from other group members for not cooperating or doing the assigned tasks may result in dismissal from a group. In such a situation the student will not be awarded any marks nor offered to do an individual project.
- (iv) For individual assignments, while students can discuss the assignment with their colleagues, they should complete the assignment independently.

Students Accessibility Services

Student Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services <http://umanitoba.ca/student/saa/accessibility/>

520 University Centre

204 474 7423

[Student_accessibility@umanitoba.ca](mailto:accessibility@umanitoba.ca)

Expectations: You Can Expect Me To

A large part of teaching practice includes the use of PowerPoint lectures in class. The PowerPoint lectures provide a summary of key points. However, students are expected to attend class as discussions during lectures form part of the examinable material. Students are expected to be engaged and to give their best effort in class discussions but perfection is not expected.

Class Schedule

This schedule is subject to change at the discretion of the instructor and/or based on the learning needs of the students but such changes are subject to Section 2.8 of the – [ROASS-Procedure](#)). If you miss lecture(s), it is your responsibility to obtain any information announced in class.

MONTH	DATES	LECTURE TOPIC / UNIT
January	3	Introductions
	5, 8	Swine Production Systems
	10	Environmental Requirements of Swine: Thermal Comfort; Codes of Practice; Handling
	12	Swine Industry in Manitoba (Guest Speaker)
	15	Environmental Requirements of Swine: Thermal Comfort; Codes of Practice; Handling
	17	Bio-security (Guest Speaker)
	19	Principles of Genetics and Genetic Improvement
	22	Reproduction – Principles Revisited
	24	Reproduction – Principles Revisited
	26	No class for diploma students
	29, 31	Feeds & Feeding; Evaluation of pig feed ingredients
February	2	Management & Nutrition of the Breeding Herd: Replacement Stock
	5	Term Test I
	7	Management & Nutrition of the Breeding Herd: Replacement Stock, Breeding & Gestation, The Boar
	9	Management & Nutrition of the Breeding Herd: Replacement Stock, Breeding & Gestation, The Boar

February	12, 14	Management & Nutrition ~ Farrowing & Lactation
	16	Management & Nutrition of the Suckling and Weaned Pig
Louis Riel Day	19	No classes university will be closed
Midterm break	21, 23	No classes (University will be open)
	26	Management & Nutrition of the Suckling and Weaned Pig
	28	Carcass and meat quality (Guest Speaker)
March	2	Carcass and meat quality (Guest Speaker)
	5, 7	Management & Nutrition of Growing - Finishing Pig
	9	Term Test 2
	12	Marketing and Quality Assurance (Guest Speaker)
	14, 16	Disease & Sanitation (Guest Speaker)
	19	Sustainability of Production / Future Trends
	21, 23	Class Presentations
	26	Manure Management (Guest Speaker)
	28	Diploma last lecture and course review
Good Friday	30	No class
April	2, 4	Monogastric Production Systems (Case studies)
	6	LAST DAY OF CLASSES

Laboratory Expectations

The labs and tutorials offer opportunities for experiential learning as well as use case studies to help students to develop critical thinking skills. Experiential learning activities are in the form of demonstrations. Some of the take home or in-class assignments will be used to assess students' participation and comprehension.

Lab Schedule

DATE	LAB	LABORATORY TITLE
Jan	9	Feed identification and lab analyses
	16	Barn ventilation (Guest Speaker)
	23	Basics of Animal Feed and Animal Nutrition (Feed processing 1)
	30	Basics of Animal Feed and Animal Nutrition (Feed processing 2)
Feb	6	Diet formulation – demonstration and assignment using concept file
	13	Group 1 –Glenlea Swine Unit: (Barn Layout) Group 2 –Feed mill Tour
	20	Midterm Break
	27	Group 2 –Glenlea Swine Unit: (Barn Layout) Group 1 –Feed mill Tour
Mar	6	Group 2 –Glenlea Swine Unit: Piglet processing
	13	Group 1 –Glenlea Swine Unit: Piglet processing
	20	Class Presentations
	27	TBA
April	3	No lab

Course Evaluation Methods

Test will contain sections with multiple choice, short and long answer questions. No make up exams or assignment will be allowed, except for absence that has been cleared by the instructor. For such absence one of the following would be expected prior to writing a make-up exam or assignment such as: 1) medical emergency-a written and signed note from a medical doctor is required, or 2) Schedule clashes – A letter from faculty in charge of the course or university sanctioned activity.

The due dates for the various components of the grade are given below:

Due Date:	Assessment Tool	Value of Final Grade
Written on each assignment	Laboratory assignments	10%
March 20, 21, 23	Class presentation	10%
February 5, 2018	Term test 1	20%
March 9, 2018	Term test 2	20%
TBA	Final examination (University schedule)	40%

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

Assignment Descriptions

Presentation Assignment Topics

1. Canadian Swine Industry: Current and Potential Future Challenges
2. Sow Management and Maximizing Longevity
3. Managing the Farrowing Period for the Sow and the Litter
4. Factors that Affect Performance in a Wean to Finish Operation
5. Porcine epidemic diarrhea virus – effects on industry and its control measures
6. The Importance of Water Quality in Swine Production
7. Animal Welfare and Societal Issues in Swine Production
8. Multiple site production systems / segregated early weaning / effect of disease on production efficiency.
9. Vertically integrated pork production / production alliances / marketing of hogs.
10. Alternative housing systems for swine.

11. Housing and management of gestating sows – issues and possible solutions.
12. The Significance of Quality Assurance and Food Quality Programs.
13. The role of antibiotics as growth promoters in swine feeds.
14. Alternative feed ingredients for pork production in Manitoba.
15. Voluntary feed intake in swine – its significance and related challenges.
16. Split sex and phase feeding as management tools in pork production.
17. Manipulating end product quality: nutritional and management strategies.
18. The impact of pork production on the environment.
19. Feeding and management of early-weaned pigs.
20. The influence of sow nutrition and management on litter performance.
21. The impact of mycotoxin contamination of feed ingredients on pork production.
22. Feed supply and the ethanol industry – potential effects on the swine industry.
23. Liquid feeding systems for pork production – issues and potential benefits

Assessment criteria: Topic Presentations

The following parameters will be used in evaluating your presentation:

1. Quality of presentation

- a. Quality of slides
- b. Organization of presentation
- c. Delivery of presentation

2. Demonstration of in - depth understanding of the subject matter

- a. Inclusion of pertinent information
- b. Attempts to critically comment on the subject matter
- c. Not afraid to speculate

3. Ability to stimulate discussion and to answer questions

Assignment Extension and Late Submission Policy

- If you miss lecture(s), it is your responsibility to obtain any information announced in class.
- Due dates will be given on all assignments.
- The following applies to all Labs:
 - Students must sign in during each lab.
 - No late lab assignments will be accepted.
 - No lab reports will be graded if you do not attend the lab.
 - No make up exams or assignment will be allowed, except for absence that has been cleared by the instructor.
- For such absence one of the following would be expected prior to writing a make -up exam or assignment such as: 1) medical emergency-a written and signed note from a medical doctor is required, or 2) Schedule clashes – A letter from faculty in charge of the course or university sanctioned activity is required
- Students who miss an exam or lab and do not have a valid excuse will get a zero.
- You should retain all graded items until a final course grade is assigned.
- Cheating will result in removal from the course and assignment of an 'F' for the course grade.
- Assignments done for this course cannot be used in other courses.
- Likewise, you cannot use assignments from other courses to fulfill requirements of this course.