**University of Manitoba**

**Faculty of Agricultural and Food Sciences**

**Department of Animal Science**

**ANSC4640 SWINE PRODUCTION SYSTEMS**

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# COURSE DETAILS

|  |  |
| --- | --- |
| **Course Title & Number:** | ANSC4640 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**  **Location for labs/tutorials:**  **Lab times & Days of Week:** | 220 Animal Science  220 Animal Science  Tuesdays from 2:30 pm to 5:15 pm |
| **Prerequisites:** | ANSC 2500 Animal Production |

# Instructor Contact Information

|  |  |
| --- | --- |
| **Instructor(s) Name:** | Dr. Martin Nyachoti |
| **Preferred Form of Address** | Whatever you are comfortable with Martin or Dr. Nyachoti |
| **Office Location:** | 224 Animal Science Building |
| **Office Phone No.** | Phone: 204 474-7323 |
| **E-mail** | martin.nyachoti@umanitoba.ca |
|  | All e-mail communication must conform to the [Communicating with Students](http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf) 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. |
| **Office Hours or Availability:** | No set time or hours. You can e-mail me between 8:30 and 5:00 pm. Depending on the issue(s) to be discussed, a telephone call can be arranged. You can also consult my publicly available calendar to access my schedule. |
| **Contact:** | Use e-mail, phone or come in person to my office |

# Course Description

**ANSC 4640 Swine 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 outlines swine production systems of relevance to the agricultural industry. Open only to students holding at least 60 credit hours. Prerequisite: ANSC2500

# General Course Information

The swine industry is an important sector in Manitoba. It requires the engagement of people with relevant training, knowledge, and skills to contribute to the provincial economy. This course offers an opportunity for training 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:

* 1. Introduce students to the basic principles and practical skills in swine production systems with particular reference to swine production and management.
  2. List and explain the management practices used in modern pork production.
  3. Discuss these management practices in relation to their impact on the profitability of swine production systems.
  4. 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:

1. Describe the structure of the swine industry in Manitoba and Canada.
2. Understand the inputs, components, and sales and marketing of Canadian pork products.
3. Analyze the issues that face the Canadian swine industry and its socioeconomic role in Canada.
4. Identify factors that influence the performance of pigs in different classes.
5. Apply the skills and knowledge from this course to evaluate swine enterprises and offer solutions to solve problems and improve profitability.
6. Develop the 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

Lecture material will not be recorded, but PowerPoint slides will be uploaded to UMLearn Where recorded course materials are used, they are meant for your private study and research and must not be shared on public electronic platforms.

# Textbook, Readings, Materials

**Supplementary Reading Material**

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; 2023. 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.

Peer reviewed scientific journal articles

# Course Technology

Lecture notes will be posted on UMlearn

# Class Communication

The University requires all students to activate an official University e-mail 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 e-mail account for all communication between yourself and the university.

# Expectations: I expect you to:

I expect you to:

1. Attend class on time, so we start on time.
2. Ask for help when you need assistance.
3. Submit your own work for individual assignments and work together in a team for group-assigned projects.
4. To act in a civil, respectful, and responsible manner toward all members of the U of M community.
5. I will treat you respectfully and appreciate the same courtesy. See [Respectful Work and Learning Environment Policy.](http://umanitoba.ca/admin/governance/governing_documents/community/230.html)

**Academic Integrity:**

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

1. Group projects are subject to the rules of academic dishonesty;
2. Group members must ensure that a group project adheres to the principles of academic integrity.
3. Group assignments are meant to help develop an appreciation of teamwork 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.
4. 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

Phone: 204 474 7423 E-mail: [Student\_accessibility@umanitoba.ca](mailto:Student_accessibility@umanitoba.ca)

# What to Expect from the Instructors

Deliver course material mainly in the form of PowerPoint lectures in class.

Provide a respectful learning environment

Answer your questions honestly and where if information to answer your questions in not Provide opportunities for discussion during class or labs

Provide a summary of key points.

# 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](http://umanitoba.ca/admin/governance/governing_documents/students/278.html)- Procedure). If you miss lecture(s), it is your responsibility to obtain any information announced in class.

|  |  |  |
| --- | --- | --- |
| **MONTH** | **DATES** | **LECTURE TOPIC / UNIT** |
| January | 8 | Introductions |
|  | 10, 12 | Swine Production Systems |
|  | 15 | Swine Industry in Manitoba **Robyn Harte MB Agriculture** |
|  | 17, 19 | Environmental Requirements of Swine: Thermal Comfort; Codes of Practice; Handling |
|  | 22 | Biosecurity **Robyn Harte MB Agriculture** |
|  | 24 | Principles of Genetics and Genetic Improvement |
|  | 26 | Principles of Genetics and Genetic Improvement |
|  | 29 | Reproduction – Principles Revisited |
|  | 31 | Reproduction – Principles Revisited |
| February | 2 | Feeds & Feeding; Evaluation of pig feed ingredients |
|  | 5 | Feeds & Feeding; Evaluation of pig feed ingredients |
|  | **7** | **Test 1** |
|  | 9, 12, 14 | Nutrition and Management of the Breeding Herd: Replacement Stock |
|  | 16 | Management & Nutrition – Farrowing & Lactation |
|  | ***19 - 23*** | ***Louis Riel Day & Winter Term Break*** |
|  | 26 | Management & Nutrition of the Suckling and Weaned Pig |
|  | 28 | Management & Nutrition of the Suckling and Weaned Pig |
| March | 1 | Management & Nutrition of Growing - Finishing Pig |
|  | 4 | Management & Nutrition of Growing - Finishing Pig |
|  | 6, 8 | Carcass and meat quality **(Dr. Argenis Rodas-Gonzalez)** |
|  | 11 | Disease and Sanitation **(Dr. Richard Hodges)** |
|  | 13 | Disease and Sanitation **(Dr. Richard Hodges)** |
|  | **15** | **Term Test 2** |
|  | 18 | Manure Management **(Bryce Wood)** |
|  | 20 | Marketing and Quality Assurance **(Guest lecture)** |
|  | 22 | Sustainability of Production / Future Trends |
|  | 25, 27 | Class Presentations |
|  | ***29*** | ***Good Friday – No Classes*** |
| April | 1 | Class Presentations |
|  | 3 | Class Presentations |
|  | 5 | Course Review / Last Day of Class - Diploma |
|  | 8 | Case studies |
|  | 10 | Case studies / Last Day of Class - Degree |

# 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 take-home or in-class assignments will be used to assess students’ participation and comprehension.

# Lab Schedule

|  |  |  |
| --- | --- | --- |
| **DATE** | LAB | LABORATORY TITLE |
| Jan | 9 | No lab/ tutorial |
|  | 16 | Tutorial on Feed Laboratory Analysis |
|  | 23 | No Lab (Diploma Experiential Learning) |
|  | 30 | Glenlea Micro feed mill tour |
| **Feb** | 6 | Glenlea Swine Unit – Pig Flow, Breeding and Feeding |
|  | 13 | No Lab – Class presentation preparation |
|  | **20** | **Winter Term Break** |
|  | 27 | Diet formulation |
| March | 5 | Virtual barn visit |
|  | 12 | No Lab - Class presentation preparation |
|  | 19 | Swine farm visit |
|  | 26 | Class (Individual) Presentations |
| April | 2 | No Lab - TBA |
|  | 9 | No Lab - TBA |

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# Important Dates

January 8, 2024 – First day of class

February 19, 2024- Louis Riel Day

February 20 – 23, 2023 – Winter Term Break

March 29, 2024 – Good Friday no classes

April 10, 2024, the last day of classes

See the university website for a comprehensive list of dates

# Course Evaluation Methods

Test will contain sections with multiple choice, short and long answer questions. No make-up exams or assignments will be allowed, except for absence that has been cleared by the instructor

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

|  |  |  |
| --- | --- | --- |
| Due Date: | Assessment Tool | Value of Final Grade |
| See listing | Laboratory/Tutorial assignments | 10% |
| March 18 | Class presentation  Presentation outline  Presentation | 5%  15% |
| February 7 | Term test 1 | 20% |
| March 15 | Term test 2 | 20% |
| TBA | Final examination (University schedule) | 30% |

# 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. Managing sows for a long productive life
2. Feeding and management of nursery pigs.
3. Foreign animal diseases – implications for the Canadian swine industry
4. The importance of water in swine production
5. Animal welfare and societal issues in swine production
6. Housing and management of swine – issues and possible solutions.
7. Voluntary feed intake in swine – its significance and related challenges.
8. Manipulating pork quality: nutritional and management strategies.
9. The impact of pork production on the environment.
10. The impact of mycotoxin contamination of feed ingredients on pork production.
11. Significance of gut health management in piglets
12. Sustainability of the Canadian swine industry

**Assessment criteria: Topic Presentations**

The following parameters will be used in evaluating your presentation:

1. **Length of presentation**
   1. Total of 20 minutes broken down into 15 minutes of presentation and 5 minutes of questions and discussions
2. **Quality of presentation**
   1. Quality of slides
   2. Organization of presentation
   3. Delivery of presentation
3. **Demonstration of in - depth understanding of the subject matter**
   1. Inclusion of pertinent information
   2. Attempts to critically comment on the subject matter
   3. Not afraid to speculate
4. **Ability to stimulate discussion and answer questions**
5. **Please note the following:**
   1. Presentation must focus on what happens on a commercial hog farm
   2. The presentation outline must be submitted to the instructor by **March 18**

# Assignment Extension and Late Submission Policy

* Due dates will be given on all assignments. If you have problems completing the assignment by the due date please let the instructor know before the date if possible.
* All students are encouraged to complete all the assignments because every component contributes to the final grade