

Course Outline Form: Fall 2017

General Information

Course Code: ANSC*4290

Course Title: Swine Nutrition

Course Description:

This is a course designed to explore details of evaluating feed ingredients and feeding programs for swine, as well as the use of pigs as models for other non-ruminant animals and humans to better understand nutrition concepts. Students will use models to evaluate various aspects of nutrient partitioning for growth and reproduction in swine.

Credit Weight: 0.50

Academic Department (or campus): Department of Animal Biosciences

Campus: Guelph

Semester Offering: Fall

Class Schedule and Location:

Tuesdays and Thursday 8:30 a.m. to 9:50 a.m. in the Animal Science and Nutrition Building (ANNU), Room 204

NOTE: Some lectures slots will be laboratories

Instructor Information

Instructor Name: E. Kiarie

Instructor Email: ekiarie@uoguelph.ca

Office location and office hours: ANNU 226 and students are asked to email for appointment times.

Supporting instructors:

Instructor Name: Wilfredo Mansilla

Instructor Email: wmansill@uoguelph.ca

Instructor Name: Laura Eastwood

Instructor Email: Laura.Eastwood@ontario.ca

GTA Information

GTA Name: Kayla Silva

GTA Email: ksilva03@uoguelph.ca

GTA office location and office hours: email for appointment

Course Content

Specific Learning Outcomes:

1. Become familiar with means to evaluate and manipulate the feeding value of swine feed ingredients.
2. Become familiar with the basic concepts of nutrient utilization for growth and reproduction in swine.
3. Skills to develop and critically evaluate swine feeding programs, including preparation of reports.
4. Awareness of current issues, challenges and opportunities in swine nutrition, including use of pigs as models for other non-ruminant animals and humans to better understand nutrition concepts.
5. A basis for continued acquisition of knowledge and further development of skills in swine and non-ruminant nutrition.

Lecture Content:

Date	Topic	Instructor
Thursday, September 7, 2017	Course introduction	Elijah
Tuesday, September 12, 2017	Overview of swine gut anatomy and physiology	Elijah
Thursday, September 14, 2017	Nutrients and anti-nutrients, nutrient availability I	Elijah
Tuesday, September 19, 2017	Swine feed ingredients I	Wilfredo
Thursday, September 21, 2017	Swine feed ingredients II	Wilfredo
Tuesday, September 26, 2017	Nutrients and anti-nutrients, nutrient availability II	Elijah
Thursday, September 28, 2017	Feed manufacturing: feedstuffs, formulation, processing	Elijah
Tuesday, October 3, 2017	Feed manufacturing: feedstuffs, formulation, processing	Elijah
Thursday, October 5, 2017	Mid-term 1 (In class)	Elijah, Kayla
Tuesday, October 10, 2017	Fall study break-NO CLASSES or LAB	
Tuesday, October 17, 2017	Integrated nutrition-Starter pigs	Laura
Thursday, October 19, 2017	Integrated nutrition-Growing finishing pigs	Laura
Tuesday, October 24, 2017	Integrated nutrition-Sows	Laura
Thursday, October 26, 2017	Midterm 2 (In class)	Laura, Kayla
Tuesday, October 31, 2017	Feed mill tour, Wallenstein Feed Mill	Elijah, Kayla
Thursday, November 2, 2017	Principles of nutrient partitioning for growth and reproduction I	Elijah
Thursday, November 9, 2017	Principles of nutrient partitioning for growth and reproduction II	Elijah
Thursday, November 16, 2017	Arkell feed mill and swine tour-Optional	Kayla
Tuesday, November 21, 2017	NO CLASSES or Lab-Final day to submit assignments & reports	
Thursday, November 23, 2017	Guest lecture-issues in practical swine nutrition-industry perspectives	Elyse Clement
Tuesday, November 28, 2017	Guest lecture-issues in practical swine nutrition-research perspectives	Elijah
Thursday, November 30, 2017	Last class, course review, questions and answers	Elijah

Labs (Forshaw Lab, ANNU 102, 8:30 to 10:30 AM)

Date	Lab #	Topic
Thursday, October 12, 2017	1	Demonstration: Feed mixing efficiency & particle size
Tuesday, November 7, 2017	2	Simple nutrient partitioning model
Tuesday, November 14, 2017	3	NRC nutrient requirement model

Seminars:

None

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Laboratory assignments	Lab 1: Oct 22, 5 PM Lab 2: Nov 17, 5 PM Lab 3: Nov 21, 5 PM	30% (10% each)	- Familiarity with feed ingredient evaluation systems and concepts of least cost feed formulation and nutrient utilization in swine, including relevant software
Mid-terms	Oct 5, 8:30-9:50 AM Oct 26, 8:30-9:50 AM	30% (15% each)	- Understanding of key principles in swine nutrition - Application of knowledge for addressing swine and non-ruminant nutrient issues
Review paper or critical analyses of feed manufacturing and feed particle size	Choice for review paper or Feeding manufacturing: September 21, 5 PM; choices to be emailed to Kayla Silva (course GTA) Submission of review paper or feed manufacturing report: Nov 21, 5 pm	15%	- Critical analyses of scientific concepts or commercial swine feeding practices - Organization and clarity of written reports
Final exam	Date: Dec 5 Time: 08:30-10:30 Room: TBC	25%	- Understanding of key principles in swine nutrition - Application of knowledge for addressing swine and non-ruminant nutrient issues

Additional Notes (if required):

Course Structure: How will you learn

Learning Activity	Role of Activity in Course	Student's responsibility
Lectures	Presentations of topics relevant to course objectives in an organized lecture format. Topics are outlined in the lecture schedule. Copies of slides used in the lectures will be distributed in advance via CourseLink. Ample opportunity will be provided for class-room discussions.	Background reading in preparation for participation in class-room discussion.
Computer laboratories & Laboratory demonstrations	Exposure to simple models that represent nutrient partitioning for growth and reproduction in swine and to swine feed formulation programs.	Develop skills in using various computer programs. Develop an understanding of the feed ingredient evaluation systems, as well as principles of nutrient partitioning for growth and reproduction in swine. Prepare reports in the proper format and in time.
Review paper OR critical analyses of feeding manufacturing processing and feed particle size FURTHER DETAIL TO BE PROVIDED	Become familiar with relevant scientific literature on one specific aspect of swine nutrition. OR Understand the fundamentals of feed manufacturing operations, good feed manufacturing practices and importance of optimal feed particle size in swine nutrition	Work independently or in a small group to identify a relevant aspect of pig nutrition, identify and interpret appropriate scientific literature and write a critical analyses review paper. OR Join designated feed mill tour on October 31 st , working in a group of 2 or 3 gather relevant information related to feed manufacturing. Use the collected information and appropriate scientific literature to write a detailed report on feed manufacturing processes and write a brief report on the importance of feed particle size in swine nutrition.
Evaluation (exam)		Acquisition and integration of knowledge and information. Written communication skills.

Final examination date and time:

December 5, 2017; 08:30 to 10:30 AM

Final exam weighting:

25%

***Please confirm time and date using WebAdvisor.**

***Final Examination regulations are detailed at: [Examination Regulations](#)**

Course Resources**Required Texts:**

N/A

Recommended Texts:

- Nutrient requirements of swine. 2012. Eleventh Revised edition. National Research Council. National Academic Press, Washington, DC.
- Swine Nutrition. 2001. A. Lewis and L. Southern Ed. CRC Press, Boca Raton, Florida 33431 USA.

Lab Manual and Guidelines:

- Will be distributed as part of the lab assignments; software used in the laboratories are available for use outside the computer lab
- Guidelines for review papers will be posted in the Dropbox of Courselink and accessible throughout the term
- Guidelines for feed manufacturing will be posted in the Dropbox of Courselink and accessible throughout the term

Other Resources:

None

Field Trips:

Commercial feed mill and University of Guelph swine research facility.

Additional Costs:

None

Course Policies

Grading Policies:

*Please indicate all course policies regarding in-semester tests and assignment submissions, including time and place for submission of assignments and explicit penalties for late submissions. Undergraduate Grading Procedures

*Please note that these policies are binding unless academic consideration is given to an individual student.

Due dates for assignments are indicated above. Assignments can be handed in class or electronically (Dropbox, email) or dropped off at ANNU Room 226 (E. Kiarie). For late assignments, marks will be reduced by 10% for each day after the due date.

Detailed marking schemes are included in the assignments, including the final exam.

For the computer laboratories marks are given for presenting correct numerical values (about 35% of total) and the proper and concise interpretation of the numerical values (about 65%).

For the review paper or critical analyses feeding manufacturing, marks will be given for content (amount, depth and relevance of information; critical analyses/understanding of relevant concepts; appropriateness of conclusions; 70%) as well as clarity of the report (organization/use of appropriate headings, tables and figures; effective use of scientific references; proper use of language; 30%).

The mid-term and final exams evaluate relevant knowledge (about 30%) and the integration and application of this knowledge to swine nutrition issues (about 70%).

Course Policy on Group Work:

For the computer laboratories students are encouraged to work in groups, but assignments need to be handed in and will be marked for individual students.

For the Feed mill tour report, students are expected to work in groups of 2 or 3 and one report is expected from each group. Students within groups will be given the same marks, unless students within the group all agree - in writing - to an uneven distribution of marks. The same arrangements apply if review papers are prepared by of more than one student.

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration:

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

Academic Misconduct:

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Detailed information regarding the Academic Misconduct policy is available in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

Accessibility:

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or visit the [Student Accessibility Services website \(http://www.uoguelph.ca/csd/\)](http://www.uoguelph.ca/csd/).

Course Evaluation Information:

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the [Course and Instructor Evaluation Website](#) for more information.

Drop period:

The drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in [Section III \(Schedule of Dates\) of the Undergraduate Calendar](#).

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

Additional Course Information

Prerequisite: ANSC 3120 – Introduction to Animal Nutrition