1 Course Details

1.1 Calendar Description

This course is designed to explore details of evaluating feed ingredients and formulating diets for swine. Students will use models to evaluate various aspects of nutrient partitioning for growth and reproduction in pigs.

Pre-Requisite(s): ANSC*3120

1.2 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.

1.3 Timetable

Tuesdays and Thursday 8:30 a.m. to 9:50 a.m. in MacKinnon (MCKN), Room 225

NOTE: Some lectures slots will be computer labs

1.4 Final Exam

December 12, 2018; 7-9 pm; Room TBA
Weight: 20%

- see webadvisor for final details

2 Instructional Support
2.1 Instructor(s)

Lee-Anne Huber
Email: huberl@uoguelph.ca
Telephone: +1-519-824-4120 x53347
Office Hours: please email for appointments

2.2 Teaching Assistant(s)

Teaching Assistant: Youngji Rho
Email: rhoy@uoguelph.ca
Office Hours: please email for appointments

3 Learning Resources

3.1 Recommended Resource(s)

Nutrient Requirements of Swine (Textbook)
National Academic Press, Washington, DC.

Swine Nutrition (Textbook)

Lab Manual and Guidelines (Lab Manual)

- Please bring your own laptop to computer labs and ensure that you have downloaded and installed Chrome as your web browser. If you do not have access to a laptop, please inform the teaching assistant prior to the first computer lab so that a computer can be made available for you.
- Lab manuals will be distributed as part of the lab assignments; software used in the laboratories are available for use outside the computer lab (via a web browser).
- Guidelines for review paper on topic in swine nutrition will be posted in Courselink and accessible throughout the term.

3.2 Additional Resource(s)

Field Trips (Other)
Commercial feed mill

see further details in "Activities"

4 Learning Outcomes

4.1 Course Learning Outcomes
By the end of this course, you should be able to:
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. Develop skills to critically evaluate swine feeding programs, including preparation of reports.
4. Develop 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. Cultivate a basis for continued acquisition of knowledge and further development of skills in swine and non-ruminant nutrition.

5 Teaching and Learning Activities

5.1 Lecture

Thu, Sep 6
Topic(s): Course introduction & Lec 1. Digestive anatomy and physiology

Tue, Sep 11
Topic(s): Lec 2. Nutrients and anti-nutrients; nutrient availability I

Thu, Sep 13
Topic(s): Lec 3. Nutrients and anti-nutrients; nutrient availability II

Tue, Sep 18
Topic(s): Lec 4. Swine feed ingredients I

Thu, Sep 20
Topic(s): Lec 5. Swine feed ingredients II; feed additives

Tue, Sep 25
Topic(s): Lec 6. Feed manufacturing: feedstuffs, formulation, processing

Thu, Sep 27
Topic(s): Lec 7. Principles of nutrient partitioning for growth and reproduction I

Thu, Oct 4
Topic(s): Guest lecture – How to write a literature review
Tue, Oct 9
Topic(s): Fall Study Break - No Lecture & No Lab

Thu, Oct 11
Topic(s): Midterm

Tue, Oct 16
Topic(s): Lec 8. Principles of nutrient partitioning for growth and reproduction II

Thu, Oct 18
Topic(s): Lec 9. Integrated nutrition-Starter pigs

Thu, Oct 25
Topic(s): NO LECTURE/independent study day

Tue, Oct 30
Topic(s): Feed mill tour, Wallenstein Feed Mill
Further details TBD

Thu, Nov 1
Topic(s): Lec 10. Integrated nutrition-Growing finishing pigs

Tue, Nov 6
Topic(s): Lec 11. Integrated nutrition-Sows

Thu, Nov 8
Topic(s): Overflow day

Thu, Nov 15
Topic(s): NO LECTURE/independent study day

Tue, Nov 20
Topic(s): Guest lecture- Career Day!
Instructor: A variety of swine industry employees will discuss career paths and opportunities

Thu, Nov 22
**5.2 Lab**

**Tue, Oct 2**

**Topic(s):** LAB 1. Watson I – introduction to nutrient partitioning

Instructor: Youngji Rho

ANNU 102

**Tue, Oct 23**

**Topic(s):** LAB 2. Watson II – commercial nutrient requirements model

Instructor: Youngji Rho

Location: TBD

**Tue, Nov 13**

**Topic(s):** LAB 3. NRC 2012 - models for estimating nutrient requirements of swine.

Instructor: Youngji Rho

Location: TBD

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**6 Assessments**

**6.1 Marking Schemes & Distributions**

This course is focused on applying nutrition concepts in practical scenarios. In particular, the laboratory assignments use commercial nutrient requirement models to explore nutrient partitioning, to estimate nutrient requirements, to formulate practical swine diets with least cost formulation software, and to understand other non-nutrition factors that influence how swine nutritionist formulate diets for producers. The distribution of grades is reflective of the focus of the course.
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<td>Lab Assignments</td>
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### 6.2 Assessment Details

#### Lab Assignments (45%)

- Familiarity with nutrient partitioning and utilization in swine, and concepts of least cost feed formulation, including relevant software
- Develop skills in using various computer programs

**Due Dates:**
Lab 1: Oct 11, 5 PM, 15%
Lab 2: Nov 11, 5 PM, 15%
Lab 3: Nov 22, 5 PM, 15%

- All submissions via dropbox in courselink
- Late penalties: 5% per day overdue

#### Midterm (15%)

**Date:** Thu, Oct 11, IN CLASS
- Understand of key principles in swine nutrition
- Apply of knowledge to address swine and non-ruminant nutrient issues

#### Review Paper (20%)

**Due:** Thu, Nov 22, 5:00 PM
Become familiar with relevant scientific literature on one specific aspect of 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. Further details found on courselink.

Sept. 20, 5 PM; select topic and email to Youngji Rho (rhoy@uoguelph.ca)

Assessment of:

- Critical analyses of scientific concepts or commercial swine feeding practices
- Content, organization and clarity of written reports

- All submissions via dropbox in courselink

- Late penalties: 5% per day overdue

Final Exam (20%)

Date: Wed, Dec 12, 7:00 PM - 9:00 PM, TBD

Acquisition and integration of knowledge and information. Written communication skills.

7 Course Statements

7.1 Grading Policies

Due dates for assignments are indicated above. Assignments can be handed in class or electronically (Dropbox, email). For late assignments, marks will be reduced by 5% 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, 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%).

7.2 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 review paper, students may 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.
8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The regulations and procedures for Academic Consideration are detailed in the Undergraduate Calendar.

8.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for Dropping Courses are available in the Undergraduate Calendar.

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

8.6 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 or not 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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

8.7 Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph’s procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.