



ANSC*4290 Swine Nutrition

Fall 2023

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - August 31, 2023

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-Requisites: 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

W/F 1:00 AM - 2:20 PM

ANNU room 030

NOTE: Some lectures slots will be computer labs and/or supervised work periods.

COVID-19 Disclaimer: please be aware that the information on course delivery, accessibility and examinations presented in this outline were developed based on current University guidelines. However, the format and delivery of this course may be revised with limited notice.

1.4 Final Exam

December 4, 2023; 2:30-4:30 pm; location TBD. "Discussion with the Prof" - see details in Assessment section and CourseLink

2 Instructional Support

2.1 Instructional Support Team

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

Lectures will be delivered in-person.

Should the university transition to remote learning, lectures will be delivered synchronously via an online platform.

- **Announcements:** The instructor will use **Announcements** on the Course Home page to provide you with course reminders and updates. Please check this section frequently for course updates from your instructor or TA.
- **Email:** If you have a conflict that prevents you from completing course requirements, or have a question concerning a personal matter, you can send your instructor a private message by email. The instructor will attempt to respond to your email within 24 hours.
- **In-person meetings or video calls:** If you have a complex question you would like to discuss with your instructor, you may book a meeting. Meetings will depend on instructor availability and are booked on a first come first served basis.

This course may use a variety of technologies including;

- *CourseLink (main classroom)*
- *MSTeams*
- *Zoom*

To help ensure you have the best learning experience possible, please review the list of system and software requirements.

<https://opened.uoguelph.ca/student-resources/system-and-software-requirements>

CourseLink System Requirements

You are responsible for ensuring that your computer system meets the necessary system requirements. Use the browser check tool to ensure your browser settings are compatible and up to date. (Results will be displayed in a new browser window).

<http://spaces.uoguelph.ca/ed/system-requirements/>
<https://courselink.uoguelph.ca/d2l/systemCheck>

Course Technologies

CourseLink

This course is being offered using CourseLink (powered by D2L's Brightspace), the University of Guelph's online learning management system (LMS). By using this service, you agree to comply with the University of Guelph's Access and Privacy Guidelines. Please visit the D2L website to review the Brightspace privacy statement and Brightspace Learning Environment web accessibility standards.

<http://www.uoguelph.ca/web/privacy/> <https://www.d2l.com/legal/privacy/>
<https://www.d2l.com/accessibility/standards/>

Technical Support

If you need any assistance with the software tools or the CourseLink website, contact CourseLink Support.

Email: courselink@uoguelph.ca

Tel: 519-824-4120 ext. 56939 Toll-Free (CAN/USA): 1-866-275-1478

Support Hours (Eastern Time):

Monday thru Friday: 8:30 am–8:30 pm

Saturday: 10:00 am–4:00 pm

Sunday: 12:00 pm–6:00 pm

Technical Skills

As part of your learning experience, you are expected to use a variety of technologies for assignments, lectures, teamwork, and meetings. In order to be successful in this course you will need to have the following technical skills:

- *Manage files and folders on your computer (e.g., save, name, copy, backup, rename, delete, and check properties);*
- *Install software, security, and virus protection;*

- *Use office applications (e.g., Word, PowerPoint, Excel, or similar) to create documents;*
- *Be comfortable uploading and downloading saved files;*
- *Communicate professionally using email (e.g., create, receive, reply, print, send, download, and open attachments);*
- *Navigate the CourseLink learning environment and use the essential tools, such as Dropbox, Quizzes, Discussions, and Grades (the instructions for this are given in your course);*
- *Access, navigate, and search the Internet using a web browser (e.g., Firefox, Internet Explorer); and*
- *Perform online research using various search engines (e.g., Google) and library databases.*

Contact your course instructor if you need support with any of the above.

Netiquette Expectations

The course website is considered the classroom and the same protections, expectations, guidelines, and regulations used in face-to-face settings apply. Inappropriate behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students;
- Using offensive language;
- Copying or presenting someone else's work as your own;
- Adapting information from the Internet without using proper citations or references;
- Buying or selling term papers or assignments;
- Posting or selling course materials to course notes websites;
- Having someone else complete your quiz or completing a quiz for/with another student;
- Stating false claims about lost quiz answers or other assignment submissions;
- Threatening or harassing a student or instructor;
- Discriminating against fellow students, instructors, and/or TAs;
- Using the course website to promote profit-driven products or services;
- Attempting to compromise the security or functionality of the learning management system; and
- Sharing your username and password.

Dropbox Submissions - most assignments will be handed in as hard copies

If instructed, assignments may be submitted electronically via the online **Dropbox** tool. When submitting your assignments using the **Dropbox** tool, do not leave the page until your assignment has successfully uploaded. To verify that your submission was complete, you can view the submission history immediately after the upload to see which files uploaded successfully. The system will also email you a receipt. Save this email receipt as proof of submission.

Be sure to keep a back-up copy of all of your assignments in the event that they are lost in transition. In order to avoid any last-minute computer problems, your instructor strongly recommends you save your assignments to a cloud-based file storage (e.g., OneDrive), or send to your email account, so that should something happen to your computer, the assignment could still be submitted on time or re-submitted.

It is your responsibility to submit your assignments on time as specified on the Schedule. Be sure to check the technical requirements and make sure you have the proper computer, that you have a supported browser, and that you have reliable Internet access. Remember that **technical difficulty is not an excuse not to turn in your assignment on time**. Don't wait until the last minute as you may get behind in your work.

If, for some reason, you have a technical difficulty when submitting your assignment electronically, please contact your instructor or CourseLink Support.

<http://spaces.uoguelph.ca/ed/contact-us/>

Late Policy

If you choose to submit an assignment late, the full allocated mark will be reduced by 10% per day after the deadline for the submission of the assignment to a limit of two days after which late submissions will not be accepted.

Extensions will be considered for medical reasons or other extenuating circumstances. If you require an extension, discuss this with the instructor as soon as possible and well before the due date. Barring exceptional circumstances, extensions will not be granted once the due date has passed. These rules are not designed to be arbitrary, nor are they inflexible. They are designed to keep you organized, to ensure that all students have the same amount of time to work on assignments, and to help to return marked materials to you in the shortest possible time.

Grades and Feedback

Unofficial assessment marks will be available in the **Grades** tool of the course website.

Your instructor will attempt to have grades posted online within 2 weeks of the submission deadline, if the assignment was submitted on time. Once your assignments are marked you can view your grades on the course website by selecting **Grades** from the **Tools** dropdown menu on the navbar. Your course will remain open to you for seven days following the last day of the final exam period.

University of Guelph students can access their final grade by logging into WebAdvisor (using your U of G central ID).

<https://webadvisor.uoguelph.ca>

Artificial Intelligence Systems, ChatGPT and Academic Integrity

Artificial intelligence (AI) systems are powerful tools that promise to revolutionize research, teaching and learning. In all three areas and in the future of work, there exist creative and forward-thinking opportunities for the use of AI.

At the same time, the development of increasingly sophisticated AI systems such as ChatGPT poses potential threats to academic integrity. Unauthorized student use of AI systems undermines student learning, the achievement of learning outcomes and violates the University's academic misconduct policies.

The University is committed to ensuring that the use of AI in teaching and learning complies with existing policies and regulations that govern academic and scholarly integrity. We continue to engage the University community, including students, as we work to refine academic integrity policies and their intersection with AI tools. We affirm the following:

1. Students' work must reflect their unique intellectual capacity and demonstrate the application of critical thinking and problem solving. Unauthorized use of AI to complete assessments violates the fundamental intellectual purposes of the University and does not demonstrate student achievement of course learning outcomes.

2. Submission of materials completed by AI, without permission of the instructor, constitutes an offence under the University's academic misconduct policies, either as a form of plagiarism or the use of unauthorized aids.
3. Acceptable use of AI should be determined by the course instructor and may vary across disciplines, programs and types of assessments. In setting out course requirements and assessment criteria, the instructor should specify allowable uses of AI, if any, through the course outline and/or the learning management system (e.g., CourseLink). Clarity about the acceptable use of AI is critical for students and instructors. Students are responsible for appropriately referencing how and to what extent they have used AI in assessments in keeping with University and course requirements.

2.2 Teaching Assistants

Teaching Assistant (GTA): Nicole Gregory
Email: ngregory@uoguelph.ca
Office Hours: please email for appointments

- **Email:** If you have questions regarding lecture or lab materials, you can send your TA a private message by email. The TA will attempt to respond to your email within 24 hours.
- **Video Call:** If you have a complex question you would like to discuss with your TA, you may book a video meeting on MSTeams (or alternate platform being used by your instructor). Video meetings depend on the availability and are booked on a first come first served basis. You can also meet as a group with the TA. Specific virtual help sessions for labs may be scheduled by the TA, based on need, which you may join per your help requirements. These opportunities will be communicated via the **Announcements** tool on CourseLink.

3 Learning Resources

3.1 Recommended Resources

Nutrient Requirements of Swine (Textbook)

Nutrient requirements of swine. 2012. Eleventh Revised edition. National Research Council. National Academic Press, Washington, DC.

Swine Nutrition (Textbook)

Swine Nutrition. 2001. A. Lewis and L. Southern Ed. CRC Press, Boca Raton, Florida 33431

USA.

Lab Manual and Guidelines (Lab Manual)

- 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.

Field Trips (Other)

A field trip to a commercial feed mill will be offered.

Note: There will be a \$10 fee per student per field trip.

Library Access (Website)

Library Access

As a student, you have access to the University of Guelph's library collection, including both physical and electronic materials. **You will need this resource to complete your literature review assignment.** For information on checking out or couriering physical library items, accessing electronic journals and returning items to the library, visit the library's website.

If you are studying off campus and would like to access the library's electronic resources, use the Off Campus Login and login using your Single Sign On credentials or using your last name and library barcode.

<https://www.lib.uoguelph.ca/>

<https://www.lib.uoguelph.ca/campus-login>

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.
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5 Teaching and Learning Activities

5.1 Lecture

Fri, Sep 8

Topics: Course introduction & Digestive anatomy and physiology

Wed, Sep 13

Topics: Principles of nutrient partitioning for growth and reproduction I

Fri, Sep 15

Topics: Principles of nutrient partitioning for growth and reproduction II

Wed, Sep 20

Topics: LAB 1 – Grow-finish model; NRC (due Sept 29, 2023)

Fri, Sep 22

Topics: Supervised work period – no lecture

Wed, Sep 27

Topics: NO LECTURE, NO LAB

Fri, Sep 29

Topics: Nutrients and anti-nutrients; nutrient availability I

Wed, Oct 4

Topics: Nutrients and anti-nutrients; nutrient availability II

Fri, Oct 6

Topics: Swine feed ingredients I

Wed, Oct 11

Topics: LAB 2 – Gestating sow model; NRC (due Oct 20, 2023)

Fri, Oct 13

Topics: Supervised work period - no lecture

Wed, Oct 18

Topics: Swine feed ingredients II; feed additives

Fri, Oct 20

Topics: Feed manufacturing: feedstuffs, formulation, processing

Wed, Oct 25

Topics: MIDTERM (in class)

Fri, Oct 27

Topics: Integrated nutrition – Starter pigs I

Wed, Nov 1

Topics: LAB 3 – Lactating sow model; NRC (due Nov 10, 2023)

Fri, Nov 3

Topics: Supervised work period – no lecture

Wed, Nov 8

Topics: Integrated nutrition – Starter pigs II

Fri, Nov 10

Topics: Practical industry nutrition challenges – Victoria Stewart;
MFS

Wed, Nov 15

Topics: LAB 4 – Swine nutrition practicum; NRC (due Nov 29, 2023)

Fri, Nov 17

Topics: Career paths in the swine industry – Dr. Eastwood; OMAFRA

Wed, Nov 22

Topics: Integrated nutrition - Growing finishing pigs

Fri, Nov 24

Topics: Integrated nutrition – Sows

Wed, Nov 29

Topics: Current scientific swine nutrition issues

****Nov. 2 - Field Trip**

Topics: ** VOLUNTARY TRIP TO FEED MILL (WALLENSTEIN FEED &
SUPPLY)

6 Assessments

6.1 Marking Schemes & Distributions

This course is focused on applying nutrition concepts in practical scenarios. In particular, the laboratory assignments use nutrient requirement models to explore nutrient partitioning, to estimate nutrient requirements, to formulate practical swine diets, 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.

Name	Scheme A (%)
Lab Assignments	60
Midterm	15
Review Paper on a Topic in swine nutrition	15
Final exam - A chat with the prof	10
Total	100

6.2 Assessment Details

Lab Assignments (60%)

Date: In class

Learning Outcome: 1, 2, 3

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

Due Dates:

Lab 1: Sept 29, due in class, 15%

Lab 2: Oct 20, due in class, 15%

Lab 3: Nov 10, due in class, 15%

Lab 4: Nov 29, due in class, 15%

- Late penalties: The full allocated mark will be reduced by 10% per day after the deadline to a limit of two days.

Midterm (15%)**Date:** Wed, Oct 25, In class**Learning Outcome:** 1, 2, 4, 5

A seated midterm will be used to assess acquisition and integration of knowledge.

Review paper on a topic in swine nutrition (15%)**Due:** Fri, Dec 1**Learning Outcome:** 2, 4, 5

Become familiar with relevant scientific literature on one specific aspect of swine nutrition. Work in a small group (2 people) 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 and in class.

Sept. 29, 5 PM; select partner and the topic and email to the course instructor - topics will be selected on a first-come, first-served basis

Due Date: Dec 1, 11:59 PM

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: The full allocated mark will be reduced by 10% per day after the deadline to a limit of two days at which time access to the Dropbox folder will be closed.

Final exam - A chat with the prof (10%)**Due:** Mon, Dec 4, 2:30 PM - 4:30 PM, TBD**Learning Outcome:** 1, 2, 3, 4, 5

In small groups, you will meet with the instructor to talk about your final paper during the scheduled exam time. Be prepared to answer questions about the topic and engage in discussion. Please see courselink for more details.

7 Course Statements

7.1 Compliance

Please note that pandemic restrictions in place at the time of each lecture / lab must be followed by everyone according to the guidelines provided by the University and the local public health unit. The pandemic is a community problem and we all need to actively participate in a community solution. Restrictions may include but not be limited to a vaccination requirement, proper use of appropriate PPE, hand sanitation, social distancing and other measures. Failure to comply with restrictions that are in place at the time of the lecture / lab could result in the immediate cancelation of that lecture / lab. Students would still be responsible for learning the material that was to be covered in that lecture / lab regardless of the cancelation

7.2 Grading Policies

Due dates for assignments are indicated above. Assignments will be handed in class or electronically (Dropbox, email). For late assignments, the full allocated mark will be reduced by 10% per day after the deadline to a limit of two days at which time access to the Dropbox folder will be closed.

Detailed marking schemes are included in the assignments.

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%).

Details on grading schemes for assessments are presented in the 'Assessments' section and can be found in the 'Assessments Document' on CourseLink.

7.3 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.

Students within groups (i.e. for Literature Review,) will be given the same marks, unless students within the group all agree - in writing - to an uneven distribution of marks. Marks for participation in the final discussion are individual efforts.

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 grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, 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 that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

8.9 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).
