



## **ANSC\*4280 Poultry Nutrition**

Fall 2019

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 2.00 - September 10, 2019

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### **1 Course Details**

#### **1.1 Calendar Description**

This course is designed to evaluate basic and applied poultry nutrition. Students will learn nutrient requirements of poultry, feeding value of ingredients used in poultry feed formulation and how feeding affects the environment, growth, reproduction, health, and composition of poultry products for human consumption.

**Pre-Requisites:** ANSC\*3120

#### **1.2 Course Description**

The course is designed to evaluate the nutrient requirements of poultry, the feeding value of ingredients used in poultry feed formulation and how feeding affects poultry growth and reproduction, health and composition of poultry products for human consumption.

#### **1.3 Timetable**

Timetable is subject to change. Please see WebAdvisor for the latest information.

**Class Schedule and Location:** Tuesdays and Thursdays 10:00-11:20, ANNU Room 204

#### **1.4 Final Exam**

None

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### **2 Instructional Support**

## 2.1 Instructional Support Team

<b>Instructor:</b>	Elijah Kiarie
<b>Email:</b>	ekiarie@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x53746
<b>Office:</b>	ANNU 226
<b>Office Hours:</b>	Students are asked to email for appointment times.

## 2.2 Teaching Assistants

<b>Teaching Assistant:</b>	Emily Kim
<b>Email:</b>	ekim02@uoguelph.ca
<b>Office:</b>	ANNU 132
<b>Office Hours:</b>	Students are asked to email for appointment times.

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## 3 Learning Resources

### 3.1 Recommended Resources

Scott's Nutrition of the Chicken, 4th Edition, 2001. S. Leeson and J.D. Summers, University Books, Guelph, Ontario. (Textbook)

### 3.2 Additional Resources

Poultry Science, British Poultry Science, Journal of Applied Poultry Research, World's Poultry Science Journal (Other)

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## 4 Learning Outcomes

Understand nutrients requirements for poultry and feeding strategies used in raising poultry for meat and egg production

### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Appreciate anatomical and physiological factors that influences feeding and nutrient requirements in poultry
2. Understand nutrients requirements for poultry and feeding strategies used in raising poultry for meat and egg production
3. Understand feedstuffs used in poultry feeding, their evaluation and potential limitations, processing and complete feed manufacture
4. Appreciate application of least cost feed formulation in the development of poultry feeding program

5. Appreciate emerging areas of interest and concern in poultry feeding and nutrition.
  6. Critically evaluate the scientific and technical literature related to poultry feeding and nutrition.
  7. Demonstrate proficiency on personal and professional integrity by respecting diverse points of view and the intellectual contribution of others in a group discussion
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## 5 Teaching and Learning Activities

### 5.1 Lecture

**Thu, Sep 5**

**Topics:** Course introduction, labs, feed mill tour & review paper

**References:** E. Kiarie

**Tue, Sep 10**

**Topics:** Avian digestive tract anatomy and physiology

**References:** E. Kiarie

**Thu, Sep 12**

**Topics:** Nutrients and anti-nutrients, nutrient availability I

**References:** E. Kiarie

**Tue, Sep 17**

**Topics:** Nutrients and anti-nutrients, nutrient availability II

**References:** E. Kiarie

**Thu, Sep 19**

**Topics:** Feed ingredient I

**References:** E. Kiarie

**Tue, Sep 24**

**Topics:** Feed ingredients II

**References:** E. Kiarie

**Thu, Oct 3**

**Topics:** Midterm I

**References:** E. Kiarie; E. Kim

**Tue, Oct 8**

**Topics:** Feed manufacturing: processing, formulation I

**References:** E. Kiarie

**Thu, Oct 10**

**Topics:** Feed manufacturing: processing, formulation II

**References:** E. Kiarie

**Tue, Oct 15**

**Topics:** NO CLASSES-Fall Study Break

**Thu, Oct 17**

**Topics:** Nutritional and metabolic disorders in poultry

**References:** E. Kiarie

**Thu, Oct 31**

**Topics:** Integrated Broiler nutrition (Lisa)

**References:** L. Hodgins

**Tue, Nov 5**

**Topics:** Integrated Broiler nutrition (Lisa)

**References:** L. Hodgins

**Thu, Nov 7**

**Topics:** Integrated Layers nutrition (David)

**References:** D. Trott

**Tue, Nov 12**

**Topics:** Integrated Layers nutrition (David)

**References:** D. Trott

**Thu, Nov 21**

**Topics:** Emerging issues in poultry feeding and nutrition

**References:** E. Kiarie

**Tue, Nov 26**

**Topics:** Term Project, Topic review, Feedmill report submission, Course review, questions and answers

**References:** E. Kiarie

**Thu, Nov 28**

**Topics:** Midterm II

E. Kiarie; E. Kim

**5.2 Lab**

**Thu, Sep 26**

**Topics:** Journal Paper Review and Discussion

**References:** Group A 1st Review Paper

E. Kiarie

**Tue, Oct 1**

**Topics:** Journal Paper Review and Discussion

**References:** Group B 1st Review Paper

E. Kiarie

**Tue, Oct 22**

**Topics:** Lab I-Feed mill tour-Wallenstein Feeds Supply Ltd

**References:** E. Kiarie, E. Kim

**Thu, Oct 24**

**Topics:** Self study: Term project, laboratory excercises

**References:** E. Kim (available for questions, common computer access)

**Tue, Oct 29**

**Topics:** Lab II-Feed particle size analyses, CFC feed formulation

**References:** E. Kim

**Thu, Nov 14**

**Topics:** Journal Paper Review and Discussion

**References:** Group A 2nd Review Paper

E. Kiarie

**Tue, Nov 19**

**Topics:** Journal Paper Review and Discussion

**References:** Group B 2nd Review Paper

E. Kiarie

### 5.3 Field Trip

Feed mill tour - optional

### 5.4 Learning Activities, Role of Activity in Course, and Student Responsibility

<b>Learning Activity</b>	<b>Role of Activity in Course</b>	<b>Student's responsibility</b>
Lectures	Presentations of topics relevant to course objectives in an organized lecture format (see lecture schedule), accompanied by relevant class handouts. Development of student/professor dialogue within the lecture format will be encouraged.	Appropriate background reading in preparation for participation in class-room discussion.
Review paper on a topic in poultry nutrition OR feed mill tour report	Become familiar with relevant scientific literature on one specific aspect of poultry nutrition.  OR	Work independently or in pairs to identify a relevant aspect of poultry nutrition, identify and interpret appropriate scientific literature and write a critical analyses review paper.
FURTHER DETAIL TO BE PROVIDED	Understand the fundamentals of feed manufacturing operations, good feed manufacturing practices and importance of optimal feed particle size in poultry nutrition	OR  Join designated feed mill tour on October 29, working in a group of 2 or 3 gather relevant information related to feed manufacturing. Use the collected information and appropriate scientific literature to

<b>Learning Activity</b>	<b>Role of Activity in Course</b>	<b>Student's responsibility</b>
		write a detailed report on feed manufacturing processes and write a brief report on the importance of feed particle size in poultry nutrition
Reading, evaluation and discussion of scientific papers	To encourage the critical evaluation of scientific publications via group discussions and preparation of written reports	Critically evaluate scientific and technical publications and discuss them knowledgably. Prepare concise and reasoned written critiques of the scientific article (1 page)

## 5.5 Journal Paper Review and Discussion

The purpose of this component of the course is to learn how to read journal articles critically and effectively while assessing the relevance to the discipline. In addition, it encourages students to become familiar with the recent literature in poultry nutrition and gain expertise and confidence in evaluating their relevance.

<b>Discussion #</b>	<b>Topic</b>	<b>Date</b>	
		<b>Group A</b>	<b>Group B</b>
1	Introductory lecture: reading the literature critically	September 5*	
2	Macro-nutrients: energy and amino acids	Sept 26	Oct 1
3	Macro nutrients: vitamins, trace minerals and feed additives	Nov 14	Nov 19

\*The entire class will attend the first review session. Subsequently the class will be split into two equal groups to facilitate individual student input.

- The papers will be distributed at least one week prior to the planned discussion group meeting
- Individual summary due 1 day before the group discussion (no exception)
- The discussion will begin with presentation of nutrition concept by the instructor providing relevant background to the paper
- During the remainder of the discussion students are expected to contribute to

the discussion about the content and effectiveness of the paper

- Participation in the discussion will require appropriate understanding of the papers and background reading

## 5.6 Guidelines

- Guidelines for review papers will be posted in the dropbox of CourseLink and accessible throughout the term
- Guidelines for feed mill tour will be posted in the dropbox of CourseLink and accessible throughout the term
- Guidelines for critical review of journal papers will be posted in the dropbox of CourseLink and accessible throughout the term

# 6 Assessments

## 6.1 Assessment Details

### Midterm I (15%)

**Date:** October 3, 2019, ANNU 204

**Learning Outcome:** 1, 2

### Feed formulation laboratory (30%)

**Due:** Tue, Nov 26, 11:55 PM, via Dropbox

**Learning Outcome:** 1, 2, 3, 4, 7

### Review paper on a topic in poultry nutrition or report on commercial feed mill visit (10%)

**Learning Outcome:** 5, 6

Choice for feedmill or review paper: September 19 at 11:55 PM (email: ekim02@uoguelph.ca)

Report Submission due November 26 at 11:55 PM, via Dropbox

### Midterm II (25%)

**Date:** November 28, 2019, ANNU 204

**Learning Outcome:** 3, 4, 5

### Critical Evaluation of Journal Papers (15%)

**Date:** Due date varies by section, via Dropbox

**Learning Outcome:** 5, 6

### Participation in Journal Reviews (5%)

**Date:** Due date varies by section

**Learning Outcome: 7**

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## 7 Course Statements

### 7.1 Grading Policies

Since journal reviews constitute a significant fraction of the course effort and grade, it is essential that they represent your personal efforts.

Identical individual projects: Plagiarism will be strongly suspected if two or more students submit individual projects that are substantially identical, whether in the text of the initial overview sections, the choice of strengths and weaknesses discussed or the selection of supporting references.

Quotation and references: Plagiarism has occurred if the author does not place quotation marks around word-for-word copying of print or electronic format source material even if the source is correctly cited. To further reduce the possibility that a quotation will be misrepresented or mistaken as one's own work, direct quotations should be italicized where used. Such direct quotations should be used sparingly at most.

Degree of fidelity to source: Plagiarism has occurred if the author's writing is clearly recognizable as essentially derived from cited or uncited print or electronic format sources, even though the author has altered the original source material by inverting word or sentence order, or substituting synonyms. Authors should summarize and synthesize ideas and concepts rather than interchange words. Failure to follow these guidelines will result in referral of the offending students to the Associate Dean of O.A.C. who will assign the appropriate penalty.

### 7.2 Group Work

For the Journal review assignments, students are encouraged to consult, 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 more than one student.

### 7.3 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.

## 7.4 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.

## 7.5 Additional Costs

Not Applicable

# 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 book their exams at least 7 days in advance and not later than the 40th Class Day.

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>

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