



# EQN\*2050 Introduction to Equine Nutrition

Winter 2021

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - January 08, 2021

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## 1 Course Details

### 1.1 Calendar Description

This course introduces fundamental concepts of nutrition from a biochemical perspective. The biological roles of carbohydrates, lipids and proteins are studied, as well as the role of metabolic pathways in maintaining equine health at the cellular, organ, and whole body levels. Diagnosis, management, and prevention of equine nutritional diseases are discussed.

**Pre-Requisites:** BIOL\*1050  
**Restrictions:** Registration in BBRM.EQM

### 1.2 Course Description

Course introduces fundamental concepts of nutrition from a biochemical perspective. The biological roles of carbohydrates, lipids and proteins are studied as well as the role of metabolic pathways in maintaining equine health at the cellular, organ, and whole body levels. Diagnosis, management, and prevention of equine nutritional diseases are discussed.

### 1.3 Timetable

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

### 1.4 Final Exam

Final Exam will be a Take-Home Exam

Start Time: Tuesday April 13th 1:00pm

End Time: Wednesday April 14th, 1:00pm

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## 2 Instructional Support

### 2.1 Instructional Support Team

**Instructor:** Lee-Anne Huber  
**Email:** huberl@uoguelph.ca  
**Telephone:** +1-519-824-4120 x53347  
**Office Hours:** Dr. Huber will be on leave during the W21 semester. Please contact sessional instructors with your questions and/or to schedule one-on-one meetings.

**Instructor:** Cara Cargo-Froom  
**Email:** ccargofr@uoguelph.ca  
**Office Hours:** Sessional instructor. Please email for appointments.

**Instructor:** Anna Garland  
**Email:** garlanda@uoguelph.ca  
**Office Hours:** Sessional instructor. Please email for appointments.

### 2.2 Teaching Assistants

**Teaching Assistant:** Havelah Carter  
**Email:** havelah@uoguelph.ca  
**Office Hours:** Please email for appointments.

### 2.3 Special notes for virtual learning

**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.

**Video Call:** If you have a complex question you would like to discuss with your instructor, you may book a video meeting on Zoom (or alternate platform being used by your instructor). Video meetings depend on the availability and are booked on a first come first served basis.

**Technologies and synchronous delivery:**  
 This course will use a variety of technologies including;  
 CourseLink (main classroom)  
 Zoom (integrated with CourseLink)

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>

**Lectures will be offered in a synchronous format, which means, during scheduled class time (i.e. Mon and Wed - 1:00 - 2:20 pm) you will be expected to log in to the Zoom meeting via CourseLink to view and participate in the lecture. A recording of the lecture will be uploaded to CourseLink after rendering. For Presentation Days, you will be required to log in to the lecture to present and participate in the class discussion - scheduling and further details are outlined in the Presentation and Summary Assignment document.**

### **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](mailto: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

### **Zoom**

This course will use Zoom for lectures. Check your system requirements to ensure you will be able to participate.

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

### **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 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**

Assignments should 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 assignments to the Dropbox tool 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 six days at which time access to the Dropbox folder will be closed.

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>

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## **3 Learning Resources**

### **3.1 Required Resources**

#### **Required Texts (Textbook)**

Not applicable

### **3.2 Recommended Resources**

#### **Recommended Texts (Textbook)**

None, but nutrition texts are available from the library if some concepts are not clear.

### **3.3 Additional Resources**

#### **Lab Manual (Lab Manual)**

None

#### **Other Resources (Other)**

Electronic copy of course notes, handout (copies of the PPTslides) and other material will also be posted on a weekly basis on the course website.

### **3.4 Field Trip**

Not applicable

### **3.4 Additional Costs**

Not applicable

### **3.4 Library Access**

As a student, you have access to the University of Guelph's library collection, including both physical and electronic materials. 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>

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## **4 Learning Outcomes**

## 4.1 Course Learning Outcomes

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

1. Understand digestive anatomy and physiology of the horse and how they utilize feed
2. Understand nutrient metabolism and requirements in the horse
3. Understand common feedstuffs and recognize quality
4. Understand anti-nutritional factors in common feeds used in horses
5. Be able to widely evaluate feeding management and be able to recommend changes to the feeding program
6. Be able to predict required feed intake and balance basic rations

## 4.2 University Learning Objectives

The course is designed to meet the following Learning Objectives of the University:

1. **Literacy:** Students will be required to understand introductory biochemistry and horse nutrition compiled in course notes and lecture material (power point slides).
2. **Understanding of Forms of Inquiry:** A major theme of this course will pertain to the process whereby information is obtained from a variety of sources and presented and interpreted from various perspectives.
3. **Depth and Breadth of Understanding:** This course will cross the boundaries of several conventional disciplines within the broad areas of nutrition, metabolism, physiology, feed technology, etc. Students will be encouraged to go beyond material discussed in class.
4. **Independence of Thought:** Emphasis will be placed on identifying and understanding the basis for current viewpoints. Inevitably, this results in challenges to orthodoxy.
5. **Love of Learning:** This course will be aimed at helping students to distinguish between education and training, and to ascribe value to both.

## 5 Teaching and Learning Activities

### 5.1 Lecture

Topics:

Week	Date(s)	Topics

1	<b>Jan 11</b>	<b>No lab in first week</b>
	Jan 11	Introduction, Digestive system
	Jan 13	Carbohydrates/Lipids
2	<b>Jan 18 – Lab 1</b>	<b>Excel workshop – unit conversions</b>
	Jan 18	Amino acids, proteins, enzymes
	Jan 20	Vitamins, minerals and water: part 1
3	<b>Jan 25 – Lab 2</b>	<b>How to find scientific information – Lab Assignment 1: Due in Dropbox at 11:59 pm</b>
	Jan 25	Vitamins, minerals and water: part 2
	Jan 27	Digestive physiology
4	<b>Feb 1 – Lab 3</b>	<b>Common nutrition calculations: Forages</b>
	Feb 1	Digestive physiology
	Feb 3	Nutrient metabolism
5	<b>Feb 8 – Lab 4</b>	<b>Common nutrition calculations: Concentrates</b>



	Feb 8	Nutrient metabolism
	Feb 10	Midterm during class hours
6	<b>Feb 15-19</b>	<b>READING WEEK/NO CLASSES/NO LAB</b>
	<b>Feb 22 – Lab 5</b>	<b>Application - Lab Assignment 2: Due in Dropbox at 11:59 pm</b>
7	Feb 22	Feed analysis
	Feb 24	Feed analysis <b>FINAL SUMMARIES DUE in Dropbox Feb 26 at 11:59 pm</b>
	<b>Mar 1 - Lab 6</b>	<b>Proximate analysis calculations and body condition scoring</b>
8	Mar 1	Forage
	Mar 3	Forage <b>PRESENTATIONS, 2 groups (4 students)</b> <b>Presentation recording due in Dropbox on Mar 1 at 11:59 pm</b>
9	<b>Mar 8 - Lab 7</b>	<b>Excel – calculating feed and nutrient intakes – part 1</b>
	Mar 8	Feed ingredients and processing

	Mar 10	Feed ingredients and processing <b>PRESENTATIONS, 2 groups (4 students)</b> <b>Presentation recording due in Dropbox on Mar 8 at 11:59 pm</b>
10	<b>Mar 15 - Lab 8</b>	<b>Excel - calculating feed and nutrient intakes – part 2</b> <b>Lab Assignment 3: Due in Dropbox at 11:59 pm</b>
	Mar 15	Feed ingredients and processing
	Mar 17	Pasture management and plant poisoning <b>PRESENTATIONS, 2 groups (4 students)</b> <b>Presentation recording due in Dropbox on Mar 15 at 11:59 pm</b>
11 ☒	<b>Mar 22 - Lab 9</b>	☒ <b>Feed formulation – introduction to Lab Assignment 4</b>
	Mar 22	Energy and protein utilization of feed
	Mar 24	Feeding horses at maintenance and performance horses <b>PRESENTATION, 2 groups (4 students)</b> <b>Presentation recording due in Dropbox on Mar 22 at 11:59 pm</b>
12	<b>Mar 29 - Lab 10</b>	<b>Feed formulation – work period</b>

	Mar 29	Feeding a pregnant and lactating mare
	Mar 31	Feeding young horses <b>PRESENTATION, 2 groups (4 students) Presentation recording due in Dropbox on Mar 29 at 11:59 pm</b>
13	<b>Apr 5 - Lab 11</b>	<b>Work period for Lab Assignment 4: Due in Dropbox at 11:59 pm</b>
	Apr 5	Feeding donkeys (tentative)
	Apr 7	<b>PRESENTATION, 2 groups (4 students) Presentation recording due in Dropbox on Apr 5 at 11:59 pm</b>

## 5.2 Seminar

Topics: Not applicable

## 6 Assessments

### 6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Course Assignments and Tests	0
Lab Assignment	5
Lab Assignment	5
Lab Assignment	5
Lab Assignment	20

Name	Scheme A (%)
Midterm Exam	15
Presentation - Written Summary	15
Presentation - Attendance	5
Presentation - Oral	10
Final Exam	20
Total	100

## 6.2 Assessment Details

### Course Assignments and Tests (0%)

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Laboratory assignments	Assignment 1; Jan 25, 11:59 pm Dropbox	5%	Depth and breadth of understanding, love of learning
	Assignment 2; Feb 22, 11:59 pm Dropbox	5%	
	Assignment 3; Mar 15, 11:59 pm Dropbox	5%	
	Assignment 4; Apr 5, 11:59 pm Dropbox	20%	
Midterm	February 10, in-class	15%	Literacy
Final project1	Written Summary; Feb 26, 11:59 pm Dropbox	15%	Understanding forms of inquiry and independence of thought
	Attendance	5%	
	Oral	10%	
Final exam	Take-home Exam: April 13-14	20%	Literacy

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1 Topic and partner selection due January 22 at 5 pm. Order of presentations will be randomly selected in-class on January 25. Further details regarding the final projects are included in the 'assignment' document on Courselink.

### **Late Policy**

Assignments handed in late will have 10% per day deducted.

#### **Lab Assignment (5%)**

**Date:** Mon, Jan 25, 11:59 PM, Submit via dropbox

**Learning Outcome:** 1

#### **Lab Assignment (5%)**

**Date:** Mon, Feb 22, 11:59 PM, Submit via dropbox

**Learning Outcome:** 2

#### **Lab Assignment (5%)**

**Date:** Mon, Mar 15, 11:59 PM, Submit via dropbox

**Learning Outcome:** 5

#### **Lab Assignment (20%)**

**Date:** Mon, Apr 5, 11:59 PM, Submit via dropbox

**Learning Outcome:** 3, 5, 6

#### **Midterm Exam (15%)**

**Date:** Wed, Feb 10, in-class

**Learning Outcome:** 1, 2

#### **Presentation - Written Summary (15%)**

**Date:** Fri, Feb 26, 11:59 PM, Submit via dropbox

**Learning Outcome:** 1, 2, 5

Topic and partner selection due January 22 at 5pm. Order of presentations will be randomly selected in-class on January 25.

**Presentation - Attendance (5%)**

**Date:** Wed, Mar 3 - Wed, Apr 7

**Learning Outcome:** 1, 2, 3, 5

Attendance at the presentations

**Presentation - Oral (10%)**

**Date:** Wed, Mar 3 - Wed, Apr 7

**Learning Outcome:** 1, 2, 3, 5

Oral Presentation

(Order of presentations will be randomly selected in-class on January 25)

**Final Exam (20%)**

**Date:** Tue, Apr 13, 1:00 PM - Wed, Apr 14, 1:00 PM, Take-home

**Learning Outcome:** 1, 2, 3, 4, 5, 6

Submit via Dropbox

## 6.3 Late Policy

Assignments handed in late will have 10% per day deducted.

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# 7 Course Statements

## 7.1 Grading Policies

Assignments and examinations will be graded in a timely fashion (within 14 days) and returned to the students (except the final exam) with personalized feedback and/or general feedback in class to highlight some of the shortcomings in the students' work or understanding of the concepts.

## 7.2 Course Policy on Group Work

For laboratory assignments, students may discuss concepts in groups, but assignments need to be handed in and will be marked for individual students.

For the presentation and summary, students will work in partners, in case of an odd number of students, the student can join another group or work alone. One presentation and summary are expected from each group and each individual will be given the same marks.

### **7.3 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.

## **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>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 8.10 Illness

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

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