

Equine Nutrition

Course #: 11:067:390, Sect. 90 (Online)

Spring Semester – 3cr.

Prerequisites: Horse Management 11:067:384, and Animal Nutrition 11:067:330

Time: Self-paced with weekly assignment deadlines

Location: This course is fully online. To access the course, please visit canvas.rutgers.edu. For more information about course access or support, contact the Canvas Help Desk via email at help@canvas.rutgers.edu or call 877-361-1134.

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Office Hours: Email for Appointment Only

Course Description:

This is an upper-level course focused on the proper way to feed horses and reason behind it.

Course Objectives:

At the conclusion of this course you will be able to:

1. Identify and compare the basic digestive anatomy of horses and how it relates to digestion and absorption (PLG 3*)
 - Assessment: There will be in class exams and quizzes which will have questions directed toward assessing this learning goal.
2. Recognize the diversity of a horse's nutritional requirement based on different life stages (PLG 2 & 3)
 - Assessment: There will be in class exams, quizzes which will have questions directed toward assessing this learning goal.
3. Critically evaluate feeding programs and to recognize deficits/excesses in the rations and the signs to look for in horses fed the deficient or excess nutrients (PLG 2 & 3).
 - Assessment: There will be case studies throughout the class that will help evaluate the students understanding of ration evaluation. These will be assessed for content as well as clarity of expression and analysis of the case studies.
4. Critique feeds and supplements with regard to quality, nutrient content and necessity in a horses' ration (PLG 2 & 3).
 - Assessment: There will be case studies throughout the class that will help evaluate the students understanding of feed quality and nutrient content. These will be assessed for content as well as clarity of expression and analysis of the case studies.
5. Design a feeding program for a farm incorporating 3-4 different life stages and one problem horse (PLG 6)
 - Assessment: This project will be a written analysis of the farm's diet. Students will also peer-review another group's project. This project will be assessed for content, written clarity as well as understanding of the subject material.

* See <https://animalsciences.rutgers.edu/undergraduate/mission.html> for the Animal Science Program Learning Goals (PLGs).

Course Format:

- Readings from texts below
- Mini-case studies
- Videos and computer programs for ration balancing
- Class group written and video project

Texts:

1. REQUIRED: Equine Nutrition and Feeding, ed. David Frape, 4th Edition, 2010, Wiley-Blackwell Publishing
2. REQUIRED SUPPLEMENTAL: National Research Council: Nutrient Requirements of Horses, 6th Revised Edition, 2007, <https://www.nap.edu/catalog/11653/nutrient-requirements-of-horses-sixth-revised-edition>, Can be purchased for \$99.95, or can be read online for FREE
3. SUPPLEMENTAL: Horse Pasture Management, ed. Paul H. Sharpe, 1st Edition, 2018, Academic Press, hard copy or eBook (<https://www.elsevier.com/books/horse-pasture-management/sharpe/978-0-12-812919-7>). Chapters will be supplied.
4. Videos on course website

Technology Requirements:

- Computer: current Mac (OS X or newer) or PC (Windows 7 or newer) with high-speed internet connection
- Speakers
- Webcam: built-in or external webcam, fully installed (optional)
- Microphone: built-in laptop or tablet mic or external microphone
- More information on [Canvas Basic Computer Specifications](#) and [Supported Browsers](#)

Grading:

The grade is based on discussions, assignments, quizzes, case studies and a final project. There will be discussions each week (13) for 7 points each, 5 small assignments worth 10 points each, 2 video assignments worth 40 points each, 4 quizzes worth 30 points each, 4 case studies worth 25 points each, and a final project worth 170 points (with paper (80 pts), peer review (30 pts), video (40 pts) and discussion (20 pts)). There will be NO makeup work of any kind! **PLEASE check the website at the start of each week to see what will be expected!** Quizzes will include a combination of fill-in the blank, multiple choice, and short answer. There is no final exam for this class. The final project will serve as your final evaluation of your complete understanding of equine nutrition and the proper way to feed different types of horses.

Quizzes = 120	A = 90-100%
Discussions = 91	B+ = 87-89%
Assignments = 50	B = 80-86%
Video Assignments = 80	C+ = 77-79%
Case Studies = 100	C = 70-76%
Final project = 170	D = 60-69%
Total Points = 611	F = < 59%

Final Project:

Students will work in groups of 2-3 which I will assign for you. Each group will choose a farm (real or fictional, or any combination of these) and create a diet management plan for that farm. The farm must consist of at least 3 different life stages, and 1 'problem' horse. The diet management plan must consist of the total diet (forage, concentrates and any possible supplements) using key points we used in class. Pastures must be evaluated and

used for at least 1 of the horses on the farm. If pasture is not used, you must provide a good justification as to why not. If the farm is fictional you can use one of the Rutgers pastures to evaluate however, approval MUST be obtained before entering any of the horse fields. Hay can be analyzed, or you can use what is found on equi-analytical.com (as shown in class). For more details please see the Group Project Assignment.

Course Website:

Canvas: <https://rutgers.instructure.com/courses/42396>. Login to the site using your NetID (or email) and password. If you are enrolled in the course there should be a tab identified by the course number.

Student Participation Expectations:

Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Logging in: AT LEAST TWICE PER WEEK**
Be sure you are logging in to the course in Canvas twice each week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me as soon as possible.
- **Time Commitment:**
To be successful in this course, you should plan to dedicate approximately 8-10 hours per week.
- **Participating in discussion forums: 3 OR MORE TIMES PER WEEK**
As participation, each week you can expect to post at least three times as part of our substantive class discussion on the week's topics.
- **Weekly assignments:**
Even though this class is an on-line class and is basically self-paced, each week there are assignments due. PLEASE check in each class module by Monday of each week to see when things are due. For the most part the Discussions start on the Wed. or Thur. and most major assignments are due on Saturday or Sunday. For full credit these MUST be turned in on time! See my policy below.

Discussion and Communication Guidelines:

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:**
While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics. Please also refrain from using all CAPITAL LETTERS, as this is often interpreted as shouting.
- **Tone and civility:**
Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. Treat your instructor and fellow students with respect at all times, and in all communications.

- **Citing your sources:**

When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.) For papers and other assignments please use this citation format:

https://academic.oup.com/jas/pages/General_Instructions.

Late Work and Make-up Exams:

PLEASE check the website at the start of each week to see what will be expected! Very few exceptions to these deadlines will be made, but if you feel you are one of the extreme circumstances please email me. Assignments that are turned in more than 24 hours late will not be able to count towards class credit. Assignments turned in within 24 hours of the assignment deadline will only be worth up to half credit.

Other Policies:

All students are expected to follow University policies on academic integrity:

<http://academicintegrity.rutgers.edu/>

Support Services:

Please visit the support services page (https://rutgers.instructure.com/courses/21613/pages/support-services?module_item_id=1278822) in the course information on Academic Support, Disability Services, and Technology Accessibility and Privacy Policies.

Turnitin:

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Sakai, Blackboard, Canvas, Moodle) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

Students who do not agree should contact the course instructor immediately.

Course Schedule: (Subject to change, please see Canvas for final due dates and readings)

HINT: Weekly discussions are required EVERY WEEK; first post is always due by the end of the day on Thur. (Day 4) with 2 responses due by the end of the day on Saturday (Day 6). Weekly minor assignments are always due on Sunday (Day 7) of each week there are assignments. Major assignments (i.e. quizzes, case studies, video assignments) will always be due 10 days after the assignment opens. It is your job to log onto the course on Day 1 to see what is due each week! Please see my policy above on late assignments.

Class Start Date/Module #	Lecture Topics	Major Assignment Deadlines	Reading/Videos (all listed in Canvas)
Jan. 21 Module 1	Digestive Anatomy/ Physiology Fermentation		Frape: Ch 1 Videos: eXtension Intro Video (2:14) https://www.youtube.com/watch?v=pki-SfmCsNk&t=1s GI Tract of the Horse (1:32) https://www.youtube.com/watch?v=fdz78HU_fkM _Purina 3D Horse Digestion Guide (8:00): https://www.youtube.com/watch?v=maWXXVKI-gq4
Jan. 27 Module 2	Nutrients and the NRC	Quiz 1 (through Nutrients) (D7) Project groups assigned (D7)	Frape: Parts of Ch 2, 3, 4 (see website for details) Videos: Hygain – Truth about Protein (6:07) https://www.youtube.com/watch?v=9Z3rs1v_S8Q Purina Carbohydrates in Horse Feed (7:02) https://www.youtube.com/watch?v=VtF7D1sx-l8 UMN Role of Minerals in the Horse (5:22) https://www.youtube.com/watch?v=jL4VH8_2Ifw
Feb. 3 Module 3	Energy Consumption and Metabolism	Case Study 1 Assignment (D7)	Frape: Ch 2 (energy parts only)
Feb. 10 Module 4	Feedstuffs – Roughages Reading a Forage Analysis	Project outline due (D7)	Frape: Parts of Ch 5 (see website for details) NRC: CH 8 & 10 Videos: UMN Evaluating Horse Hay (7:26) https://www.youtube.com/watch?v=2GF5jpOb574 UMN Hay Sampling (10:56) https://www.youtube.com/watch?v=sJMyyYyZek 1) Dr. Williams, Taking a Pasture Sample (On Canvas) 2) Dr. Williams, Computer Demo on Reading and Evaluating Forage Analysis Results (On Canvas)
Feb. 17 Module 5	Feedstuffs – Concentrates Reading Feed Tags	Quiz 2 (through Concentrates) (D7)	Frape: Parts of Ch 5 (see website for details) NRC: CH 8 Videos: UNL Horse Feed: Reading a Feed Tag (3:34) https://www.youtube.com/watch?v=jhu_YcuWNSO 3) Dr. Williams, Computer Demo on Different Feed Tags (On Canvas)
Feb. 24 Module 6	Feedstuffs – Supplements	Case Study 2 Assignment (D7)	Frape: Parts of Ch 5 (see website for details) NRC: CH 9 Videos: eXtension Feeding Supplements (4:05) https://www.youtube.com/watch?v=nJmDihZrLGg&t=8s UMN Mineral Supplements for the Horse (7:22) https://www.youtube.com/watch?v=nM-LgCoVf8o OSU Salt in the Diet (7:55) https://www.youtube.com/watch?v=cRYnCCHXIA

Mar. 2 Module 7	Feeding the horse at maintenance Body Condition Score/Body weight	Video Assignment 1 Due (10 days to complete)	Frape: Parts of Ch 6 (see website for details) Videos: UMN Body Condition Scoring (8:05) https://www.youtube.com/watch?v=KoLRiMHHnBs UMD How to Find Your Horse's Body Weight (2:09) https://www.youtube.com/watch?v=G40V1Xf72q8 UMD Estimating Adult Horse Body Weight (10:41) https://www.youtube.com/watch?v=kZscilJ25K8
Mar. 9 Module 8	Feeding the Stallion and Broodmare Feeding the Growing Horse	Case Study 3 Assignment (D7)	Frape: Ch 7 & 8 Videos: Hygain - Growing Horse (5:51) https://www.youtube.com/watch?v=AdteQa0xMx0
Mar. 16	NO CLASS! Spring Break!		
Mar. 25 Module 9	Feeding the Exercising Horse	Quiz 3 (through Exercising Horse) (D7)	Frape: Ch 9
Mar. 30 Module 10	Ration Formulation	Case Study 4 Assignment (D7)	Frape: Parts of Ch 6 & App A (see website for details) NRC: CH 14 Videos: 4) Dr. Williams, Computer Demo on Using the NRC Ration Formulation Software (On Canvas)
Apr. 6 Module 11	Pasture Management Evaluating a Pasture	Project Rough Drafts due (D7) Video Assignment 2 Due (10 days to complete)	Frape: Ch 10 Pasture Text: online, see course website for details Videos: UMN When to Initiate Grazing (6:52) https://www.youtube.com/watch?v=TY6xo24Tv30 RCE How to take a Soil Sample (On Canvas) RCE Evaluating a Pasture (On Canvas) 5) Dr. Williams, Species Forage ID using Step Point (On Canvas)
Apr. 13 Module 12	Feeding the Old and Geriatric Horse Nutritionally Related Diseases and Disorders Feeding the Problem Horse	Peer Reviews Due (D7)	Frape: Ch 11 & 12 (see website for details) NRC: CH 12 Videos: UMN Managing Over-weight Horses (7:00) https://www.youtube.com/watch?v=YhQGEOwTccs Purina Winter care for Senior Horses (4:44) https://www.youtube.com/watch?v=XuxfA5jywY4&index=25&list=PLF336B4465ECC2ADF Hygain Managing Laminitis (5:56) https://www.youtube.com/watch?v=PrJtZ5s6zg
Apr. 20 Module 13	Feeding Myths Feeding Behavior Feeding Management	Quiz 4 (through Myths, Mgt, etc.) (D7) Final Papers due (D5)	NRC: CH 11 Videos: PSU - Feeding myths (12:33) https://www.youtube.com/watch?time_continue=45&v=lszZA-oAGMA
Apr. 27 Module 14	Final Project Videos Post-Test	Final Videos due (D2) Video discussion (D7)	