

# equine nutrition

ANS 3405  
FALL 2020

Tues & Thurs  
11:45am – 12:35pm  
online, synchronous  
via Zoom

UNIVERSITY  
OF FLORIDA



Horses are  
“trickle feeders”  
They are built to eat  
many small meals  
throughout the day,  
and will graze  
9–16 hours in a  
natural environment.

## course description

ANS 3405 is an applied nutrition course focusing on feeding programs for all types and classes of horses. Topics will include digestion & absorption, selection of feeds, nutrient requirements, diet evaluation and formulation, feeding management, and treatment and prevention of feeding-related disorders. Classroom activities and assignments will integrate the science of nutrition with practical horse management, enabling you to create feeding programs that promote equine health and well-being.

## prerequisites for this course

Before taking this course, you must have:  
✓ ANS 3440 Principles Animal Nutrition

## learning objectives

- 1) Differentiate the digestive anatomy and digestive processes unique to equids;
- 2) Evaluate and select appropriate feeds for horses;
- 3) Design effective diets and feeding programs to meet the horse's nutritional and psychological needs;
- 4) Apply basic math (e.g., percentages, ratios, unit conversions, algebra) to formulate equine rations;
- 5) Analyze feeding-related problems and develop practical solutions.

- ✓ College Algebra (minimum math level)
- ✓ 1 semester of general chemistry

## what's in this syllabus?

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## instructor

**Dr. Lori K. Warren**

phone: (352) 392-1957

email: [LKWarren@ufl.edu](mailto:LKWarren@ufl.edu)

★contact through email or CANVAS are preferred (I usually respond within 24 hours)

## teaching assistants

**Carol Vasco**

email: [ana.carolinem@ufl.edu](mailto:ana.carolinem@ufl.edu)

**Ana Margarita Arias**

email: [aariasesquivel@ufl.edu](mailto:aariasesquivel@ufl.edu)

## office hours

- **By appointment.** Contact the TA's or Dr. Warren by CANVAS messaging or by email.
- All meetings will take place via Zoom
- TA's are available to help with math problems on class assignments

## course structure & format

This course is structured as a **synchronous online course**, in accordance with UF's [Plan Forward](#) for the fall 2020 semester. If UF shifts to online-only course delivery due to a COVID-19 outbreak, the structure of ANS3405 will remain unchanged.

### Zoom meetings

We will meet “live” on Tuesdays and Thursdays from 11:45am – 12:35pm using the Zoom Conferences platform. During these Zoom meetings, we will have whole-class and small group (“breakout room”) discussions and activities. Many of the Zoom meetings will involve graded activities; thus, it is important to attend! Go to **CANVAS > Zoom Conferences** to access links to scheduled Zoom meetings.

To avoid privacy issues, **Zoom meetings will NOT be recorded**. Therefore you should feel free to engage your camera and microphone during discussions or utilize a profile photo. Make sure your first and last name appears in your Zoom account profile so you can be identified on screen.

See the orange box *tips for Using Zoom* on the right for more information on activating your UF Zoom account, navigating in Zoom and setting up your account profile.

Refer to the blue box *Zoom etiquette* for how you are expected to behave while online and while interacting with others.

## course requirements

**engage in learning** – applied nutrition is a balance of science and mathematics. This course will require simple & algebraic calculations, reading, group & individual work, and effort outside of class. You will be required to apply what you've learned to solve practical feeding problems. To develop independent thinking that will serve you beyond your time in this course, you will be asked to research topics not covered in lecture and use your nutritional foundation to determine how the diet should be changed to improve management practices. You will need to put in consistent effort throughout the semester, as each topic and skill you learn will build upon previous ones. **To get the most out of this course, prepare for and attend Zoom meetings, engage in discussions with your peers, ask questions, take advantage of supplementary materials provided on CANVAS, and get help before you get too far behind!**

★ *Learning is not a spectator sport* ★

### pre-recorded lecture videos

In order to be prepared for the live Zoom meetings, **you will be expected to watch pre-recorded lecture videos on your own time BEFORE each Zoom meeting**. Zoom meetings are designed to enhance your understanding of lecture videos, assist you in completing course assignments, and give you the opportunity to interact with me and your peers. **To get the most out of our Zoom meetings, it is important to complete the required preparation** (ie, watch the required lecture videos ahead of time!) In some cases, you may also be asked to do some reading or ponder a question in preparation for a Zoom meeting.

Pre-recorded lecture videos will be available in CANVAS > *Modules*, along with other resource materials. Most topics have been broken up into smaller videos (5 to 25 minutes in length). You can expect to spend approximately 1-2 hours per week watching pre-recorded lectures.

**Zoom meeting topics and associated lecture videos are outlined in the Course Schedule section of the syllabus** (see last page), as well as on the homepage in CANVAS. Additionally, the ‘Modules’ section of CANVAS is organized by day to enable you to know what (and when) activities and assignments need to be completed.

**computer + webcam + mic** – all UF students are required to have a working computer (laptop or tablet) equipped with a webcam and microphone. These items will be used during Zoom meetings and are **REQUIRED** for taking online exams.

**strong internet signal** – is necessary to avoid disruptions in connectivity during Zoom meetings and online exams. Visit <https://elearning.ufl.edu/keep-learning/> for resources on internet connectivity.

**calculator** – a basic 4-function calculator is needed to perform nutrition calculations. **During exams you will only be allowed to use the calculator offered within the HonorLock system (no external devices will be allowed).**

**scanner or scanner app** – all assignments will be submitted electronically. If you do not have a tablet & stylus, you will need to scan or use a camera-to-scan app (eg, CamScanner) to convert hand-written math homework for electronic submission.

## tips for using Zoom

- If you have not used Zoom here at UF, you will need to activate your account. Go to [ufl.zoom.us](http://ufl.zoom.us) and login with your Gatorlink username and password.
- For tips on using Zoom and navigating in a meeting go to [elearning.ufl.edu/zoom](http://elearning.ufl.edu/zoom)
- To change your UF Zoom account profile (eg, how your name will appear while in a meeting or adding a profile photo that shows when your camera is off), login at [ufl.zoom.us](http://ufl.zoom.us) and click on ‘Profile’ in the menu on the left.

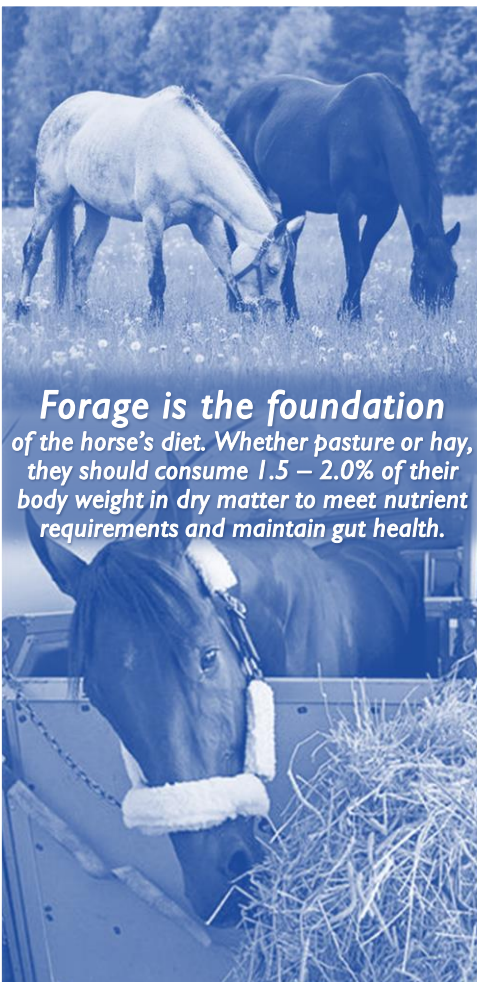


Links to join Zoom meetings are available in CANVAS

## Zoom etiquette

- **During whole-class discussions, keep your microphone muted to avoid disrupting others.** You are welcome to turn on your camera, but if you have low internet connectivity it may help to keep your camera off.
- When you are placed into small groups in “breakout rooms” you should **turn on your camera and unmute your mic** as a courtesy to your fellow students so they can see and hear you.
- **3 options for asking questions:**
  - 1) use the ‘chat’ function in Zoom;
  - 2) unmute your mic when prompted for questions; or
  - 3) send me a follow-up email.
- **Come prepared!** Watch the required lecture videos and complete other assigned preparation activities ahead of each Zoom meeting. Be ready to discuss the topic or share your solutions to a problem. This is a learning opportunity. Don't be afraid to participate!
- **Be respectful of other students' opinions and background.** If you have more horse experience than your fellow students, be a helper not a hater.
- As a courtesy to me and others, **please login to the Zoom meeting on time.**
- **Unauthorized recording and sharing of recorded materials used in this class is prohibited.**





**Forage is the foundation** of the horse's diet. Whether pasture or hay, they should consume 1.5 – 2.0% of their body weight in dry matter to meet nutrient requirements and maintain gut health.

## course assessments

Your grade for this course will be determined by your performance on homework assignments, Zoom meeting activities, and exams.

**assignments** – you will have **5 major homework assignments (50 pts each)**. Most are case studies that depict practical feeding scenarios, and you will be tasked with identifying and evaluating the problems and developing solutions. Background information may or may not be provided in lecture videos – you may have to research some areas on your own to complete the assignment. Time during Zoom meetings may be designated for working on portions of these assignments, but plan to complete them on your own time. Assignments with instructions will be posted to CANVAS at least 1 week before they are due. You can work with other students, but each person will be required to submit their own assignment using their own words (evidence of copying will result in a zero grade). All assignments will be submitted electronically in CANVAS. Submissions must be PDF or MSWord documents (photos will not be accepted). Refer to **Course Requirements** in this syllabus for camera scanning apps.

**graded Zoom activities** – several activities completed in Zoom meetings will be graded (1 – 10 pts each). Therefore, it's a good idea to attend Zoom meetings! Graded activities may include short quizzes, response to reflective questions, scavenger hunts, online information searches, and math problems and will involve both individual and group work. Usually these items will be submitted on the same day for grading.

**exams** – **3 exams (100 pts each)**, each covering about one-third of the total course material. The final exam is not cumulative, but new material builds upon previous information throughout the semester. Exam format will consist of true/false, multiple choice, short answer, essay questions, and math problems. Exams will be open-note – you can use lecture notes and other materials from CANVAS (but, consulting with other people, use of electronics other than the testing computer, and access to unauthorized websites will be prohibited). This does NOT mean you shouldn't study! Exams will be limited to 60 minutes and you will run out of time if you have to look up every answer. Exams will be administered online through CANVAS and proctored by HonorLock, requiring a working webcam & microphone.

## course resources

This course has no required textbook. Instead, I have gathered some articles (from both research and trade journals), videos and web links to expand on the topics covered in class. In some cases, I will ask you to review these materials prior to Zoom meetings; in other cases they will serve as supplementary material. I have also listed some suggested textbooks here, which you may find useful for assignments, or if you need additional background information, or simply want to learn more about any of the topics covered during the semester. I will also post lecture notes, study guides, and practice problems that can be handy study aids.

## references

Below are some books that are suggested as reference material for this course:

- Nutrient Requirements of Horses, 6<sup>th</sup> Rev. Edition (2007) ■ National Research Council ■ ISBN: 978-0-309-10212-4 ★ **Online access is free at: <https://www.nap.edu/read/11653/chapter/1>** Link provided in CANVAS
- Equine Applied & Clinical Nutrition (2013) ■ R.J. Geor, P.A. Harris, M Coenen (Eds.) ■ ISBN: 978-0-0720-3422-0
- The Horse (magazine) ■ [www.thehorse.com](http://www.thehorse.com) ■ A reasonably good source of health and nutrition info. You can access articles for free after signing up.

## CANVAS

- All course materials and communications will be hosted on CANVAS.
- <https://elearning.ufl.edu/>
- Check the **Notifications** settings for your account. Set **Announcements** to **'notify me right away'** to receive timely announcements about the course.
- **CANVAS will contain:**
  - ✓ Announcements
  - ✓ Zoom Meeting Links
  - ✓ Lecture Videos
  - ✓ Lecture Notes
  - ✓ Articles and web links
  - ✓ Assignments
  - ✓ Exams
  - ✓ Your Grades
  - ✓ Messaging (to contact Dr. Warren & TA's)

## course notes

- Lecture Notes will be posted as PDF files on CANVAS under **Modules**.
- Notes are formatted as fill-in-the-blank style. They are designed to assist you with note-taking while watching lecture videos, and contain many of the diagrams presented in lectures.
- Anything said in lecture videos or during a Zoom meeting is fair game for graded activities & exams.
- **Printing out notes or saving notes directly on your computer is recommended**, as you will be allowed to use them during exams.

# grading policy

## grade distribution

Assignments & Zoom activities.... 40 %  
3 Exams..... 60 %

## grading scale

A = 90 – 100 %  
B = 80 – 89.9 %  
C = 70 – 79.9 %  
D = 60 – 69.9 %  
E = less than 60 %

Do not wait until the end of the semester to discuss any problems you are having with this course. Your success is important!

- +/- letter grades will not be assigned.
- There will be no grading curve.
- Scores on individual assignments and exams, as well as a running tally of your cumulative course grade will be available on CANVAS > Grades.
- You have 1 week after the return of any graded item to resolve questions or disputes. After that, all grades are final.
- For information on current UF policies for assigning grade points, see: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

# attendance, make-up and late work

## attendance

**Regular attendance is expected, and active participation is necessary for successful completion of this course.**

If you know you will be absent from class, please notify the instructor at least two weeks in advance of the expected absence.

If you become ill or have an unforeseen emergency, notify the instructor as soon as you can. Documentation of approved but unexpected absences must be presented within 1 week of the absence in order to receive make-up exams and assignments.

Requirements for class attendance and make-up exams, assignments & other work policies are consistent with UF policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

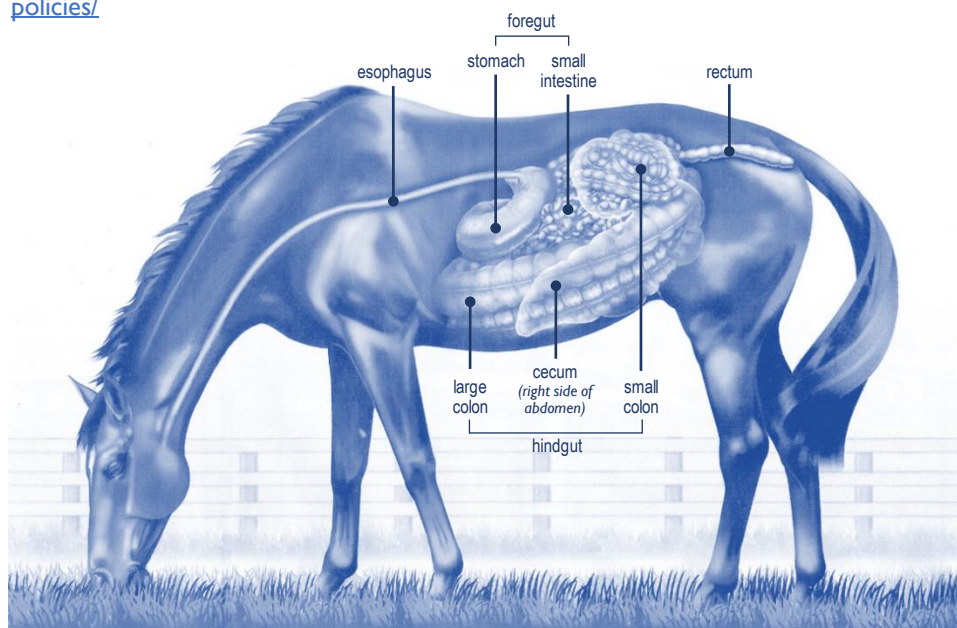
## make-up work

The opportunity to make-up missed work will not be offered without a valid excuse. **It is your responsibility to contact the instructor to develop a plan to make up any work you miss.** Makeup work for approved class absences will be accepted with no penalty if completed by the agreed-upon extended deadline.

## late work

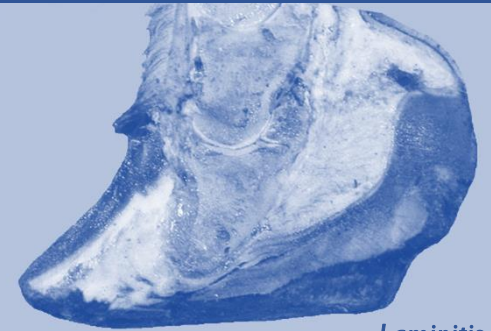
**It is expected that ALL assignments will be submitted on time.** Without a valid absence, assignments turned in late will receive the following penalty:

- 0.1 – 24 hrs late = - 25%
- 24 – 48 hrs late = - 50%
- >48 hrs late = NOT accepted



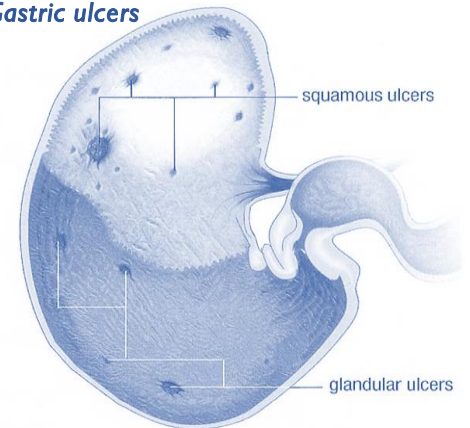
At **100 feet long with a 50-gallon capacity**, the horse's gastrointestinal tract is massive! Like a human, the horse is a monogastric animal. However, the horse's "hindgut" makes up two-thirds of its digestive system and enables them to be a grass-eating herbivore.

## Diet modification is key to managing several equine clinical diseases



Laminitis

## Gastric ulcers



## Cushing's and other metabolic diseases



# covid-19 resources

- Think you are experiencing COVID-19 symptoms? Check here for [guidance on symptoms from the CDC](#)
- What to do if you have been exposed to or are experiencing COVID-19 symptoms – [Guidance from UF Health](#)
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to makeup work.
- Behavioral expectations of students in response to COVID-19 – [UF policy](#)
- Student [frequently asked questions](#) about Screen-Test-Protect
- [COVID-19 updates and resources](#) from UF Health





**36,000 calories** per day are required by horses who undergo intense exercise training & competition, like Triple Crown Champion “Justify.” It can be a challenge to get these athletes to eat enough!

## online course evaluation process

Student assessment of instruction is an important part of efforts to improve teaching & learning. At the end of the semester, you are expected to provide feedback on the quality of instruction in this course using a standard set of university & college criteria. Guidance on how to give feedback in a professional & respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. You will be notified when the evaluation period opens and can complete your evaluations using the link in emails you receive from GatorEvals, or in CANVAS (click on *GatorEvals* in the course menu), or at <https://ufl.bluera.com/ufl/>. Summary results of evaluations are available at <https://gatorevals.aa.ufl.edu/public-results>.

## UF policies

**academic honesty** – UF students are bound by the Honor Pledge which states: “We the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code.” On all work submitted for credit at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>).

**It is assumed that you will complete all work independently** in each course unless the instructor provides explicit permission for you to collaborate on course tasks (eg, assignments, quizzes, exams).

Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel.

**It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code.** Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action.

**software use** – All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

## services for students with disabilities

– The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services, and mediating faculty-student disability related issues. Students requesting accommodations should first register with the Disability Resource Center. The Disability Resource Center will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

**Students requesting accommodations should follow this procedure as early as possible in the semester.**

Disability Resource Center ■ 352-392-8565  
■ <https://disability.ufl.edu/>

## UF services

### health and wellness

- **U Matter, We Care** ■ if you or a friend is in distress, call (352) 392-1575 or email [umatter@ufl.edu](mailto:umatter@ufl.edu) ■ <http://www.umatter.ufl.edu/>
- **counselling & wellness center** ■ counseling services, wellness coaching, consultation ■ <https://counseling.ufl.edu/> ■ (352) 392-1575
- **student health care center** ■ (352) 392-1161 ■ <https://shcc.ufl.edu/>

- **‘Student Success’ initiative** ■ tutoring, coaching, mentoring, well-being ■ <https://studentsuccess.ufl.edu>
- **campus police department** ■ 392-1111 ■ dial 9-1-1 for emergencies

### academic resources

- **e-learning technical support** ■ (352) 392-4357 ■ [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu) ■ <https://elearning.ufl.edu/>
- **career connections center** Reitz Union ■ <https://career.ufl.edu/> (352) 392-1601 ■ career guidance

- **library support** ■ receive assistance with using libraries or finding resources ■ <http://cms.uflib.ufl.edu/ask>
- **teaching center** ■ help with general study skills and tutoring services ■ <https://teachingcenter.ufl.edu/>
- **writing studio** ■ help brainstorming, formatting, & writing papers ■ (352) 846-1138 ■ <https://writing.ufl.edu>
- **student complaints** ■ to file a complaint about this course (or others), see <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>



Foals consume **4-5 gallons of milk** each day. But at 2 months of age, milk no longer meets his nutrient requirements

## important dates

### major assignments

- september 8
- september 15
- september 29
- october 22
- november 3
- november 19

### exams

- october 6
- november 10
- december 16



are you ready to learn how to feed us?

## course schedule

★ Topics and due dates are subject to change.  
You will receive at least 1-week notice.

| Date    | Zoom meeting topic(s)                                  | Lecture videos<br>★ watch <i>before</i> Zoom  | assignment due        |
|---------|--|---|-----------------------|
| sept 1  | course introduction                                    |   |                       |
| sept 3  | digestive anatomy<br>digestion & absorption            | <ul style="list-style-type: none"> <li>▪ digestive anatomy</li> <li>▪ digest. &amp; absorp. (Part 1)</li> </ul>               |                       |
| sept 8  | digestion & absorption<br>basic nutrition calculations | <ul style="list-style-type: none"> <li>▪ digest. &amp; absorp. (Part 2 &amp; 3)</li> <li>▪ DM / As-fed conversions</li> </ul> | "get to know me" Quiz |
| sept 10 | gastrointestinal disorders                             | <ul style="list-style-type: none"> <li>▪ GI disorders (Parts 1, 2, &amp; 3)</li> </ul>  |                       |
| sept 15 | using the NRC  | <ul style="list-style-type: none"> <li>▪ NRC &amp; nutrient requirements</li> </ul>   | basic nutrition calcs |
| sept 17 | ration evaluation                                      | <ul style="list-style-type: none"> <li>▪ ration evaluation (Parts 1 &amp; 2)</li> </ul>                                       |                       |
| sept 22 | maintenance horse                                      | <ul style="list-style-type: none"> <li>▪ maintenance horse</li> </ul>   |                       |
| sept 24 | maintenance horse                                      | <ul style="list-style-type: none"> <li>▪ feed selection (Parts 1 &amp; 2)</li> </ul>  |                       |
| sept 29 | case study #1 discussion                               |   | case study #1         |
| oct 1   | feed selection   | <ul style="list-style-type: none"> <li>▪ feed selection (Parts 3 &amp; 4)</li> </ul>  |                       |
| oct 6   | <b>EXAM 1</b>  |   |                       |
| oct 8   | commercial feeds                                       | <ul style="list-style-type: none"> <li>▪ feed selection (Parts 5 &amp; 6)</li> </ul>  |                       |
| oct 13  | work/performance horses                                | <ul style="list-style-type: none"> <li>▪ work/performance (Parts 1, 2)</li> </ul>   |                       |
| oct 15  | work/performance horses                                | <ul style="list-style-type: none"> <li>▪ work/performance (Part 3)</li> </ul>   |                       |
| oct 20  | ration formulation                                     | <ul style="list-style-type: none"> <li>▪ ration formulation</li> </ul>  |                       |
| oct 22  | case study #2 discussion                               |   | case study #2         |
| oct 27  | Broodmares   | <ul style="list-style-type: none"> <li>▪ broodmares (Parts 1, 2, &amp; 3)</li> </ul>  |                       |
| oct 29  | broodmares & stallions                                 | <ul style="list-style-type: none"> <li>▪ broodmares (Part 4)</li> <li>▪ stallions</li> </ul>                                  |                       |
| nov 3   | case study #3 discussion                               |   | case study #3         |
| nov 5   | growing horses   | <ul style="list-style-type: none"> <li>▪ growing horses (Parts 1 &amp; 2)</li> </ul>  |                       |
| nov 10  | <b>EXAM 2</b>  |   |                       |
| nov 12  | growing horses   | <ul style="list-style-type: none"> <li>▪ growing horses (Parts 3 &amp; 4)</li> </ul>  |                       |
| nov 17  | pasture as a feed source                               | <ul style="list-style-type: none"> <li>▪ pasture as feed (Parts 1, 2, 3)</li> </ul>   |                       |
| nov 19  | case study #4 discussion                               |   | case study #4         |
| nov 24  | clinical nutrition                                     | <ul style="list-style-type: none"> <li>▪ clinical nutrition (Parts 1 &amp; 2)</li> </ul>                                      |                       |
| nov 26  | THANKSGIVING   |   |                       |
| dec 1   | clinical nutrition                                     | <ul style="list-style-type: none"> <li>▪ clinical nutrition (Parts 3, 4, 5)</li> </ul>  |                       |
| dec 3   | clinical nutrition                                     | <ul style="list-style-type: none"> <li>▪ clinical nutrition (Parts 6, 7, 8)</li> </ul>  |                       |
| dec 8   | feeding myths / wrap-up                                |   |                       |
| dec 16  | <b>EXAM 3 – 12:30</b>                                  |   |                       |