

**Nutritional Management  
Animal Science 4100/5100  
Fall 2012**

**Instructor:** **Dr. Allison Meyer**  
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**Office Hours:** **Mon: 11 am – 12 pm**  
**Wed: 3 pm – 4 pm**  
Or by appointment

Students are encouraged to seek assistance from the instructor at any time via email, phone call, or stopping by the office.

**Meeting Times:** **Lecture: Mon & Wed at 10-10:50 am (Animal Science 104)**  
**Lab: Wed at 1:10-3 pm (Animal Science 104, or TBA)**

**5100 Discussion: TBD**

**Course Objective:** *The goal of this course is to teach students to integrate basic concepts of animal nutrition and production to make informed livestock management decisions.*

**Course Description:** This course integrates and applies the principles of nutrition in animal production while addressing nutrient requirements of various classes of animals, feed composition and nutritional value, and feeding management strategies for livestock. Additionally, practical experience in ration balancing and evaluation, nutrient analyses, and nutritional management decision making will be gained in the laboratory section. **(Prerequisite: ANSC 3100)**

**Course Materials:** **\*eCompanion and e-mail will be used to distribute many course materials. Students are expected to check these regularly during the semester.**

A textbook is not required for this course, but many materials will be handed out in class or available online. Suggested text for better understanding (all are available in the Coe Library, and some full texts are available online):

**Livestock Feeds and Feeding**, by R. O. Kellems and D. C. Church (Prentice Hall)

**Animal Nutrition**, by P. McDonald, et al. (Benjamin Cummings Publishing)

**Basic Animal Nutrition and Feeding**, by W. G. Pond, et al. (Wiley)

**The Ruminant Animal: Digestive Physiology and Nutrition**, edited by D. C. Church (Waveland Press)

**Nutrient Requirements of Beef Cattle**, National Research Council (2000)  
**Nutrient Requirements of Dairy Cattle**, National Research Council (2001)  
**Nutrient Requirements of Small Ruminants**, National Research Council (2007)  
**Nutrient Requirements of Horses**, National Research Council (2007)  
**Nutrient Requirements of Swine**, National Research Council (1998 or 2012)  
**Nutrient Requirements of Poultry**, National Research Council (1994)

**Overall Grading:**

Grade opportunity	Number	Points (each)	Point total
Exams	3	200	600
Feed ID Quiz	1	50	50
Management Plan	150	1	150
Lab Problem Sets	10	10	100
Discussion Questions	10	5	50
Participation	TBD	TBD	50
		<b>TOTAL</b>	<b>1000</b>

*5100 only: You will have an additional 50-point take home portion for each exam based on discussion group topics. Thus, your point total for the semester is 1150.*

**Feed ID Quiz:** One quiz (feedstuff identification) will be given in lab.

**Wednesday, October 10 (Lab)**

**Exams:** Three exams will be given during the semester. Each will cover approximately 1/3 of the course material in both lecture and lab. The 3rd exam will be during the scheduled Final time, but will NOT be cumulative. Despite this, much of what we cover in class will be cumulative in nature (e.g. calculating DM will be important throughout). Exams will be predominately short answer, essays, multiple matching, and calculations.

**Exam 1: Monday, October 1 (Lecture)**

**Exam 2: Monday, November 5 (Lecture)**

**Exam 2: Wednesday, December 12 (10:15 am - 12:15 pm)**

**Lab Problem Sets:** Ten lab problem sets or assignments will be given throughout the semester. There will often be time at the end of lab to work on these. These will be **due at the BEGINNING of the following week's lab**, unless otherwise specified.

**Discussion Questions:** Each Monday during lecture, a discussion question and notecard will be given to the whole class. Student responses (generally 2-4 sentences on the notecards) will be collected Wednesday during lecture and used for a discussion in lab on Wednesday. Ten of these will be graded for content.

**Participation:** During lectures or labs, 50 total points of in-class assignments, group work, or attendance will be given.

**5100 only:**

**Discussion:** Graduate students enrolled in 5100 will be expected to participate in weekly discussion sessions throughout the semester. Materials may be provided before or during weekly meetings to aid in discussion.

**Grading Scale:**

Grade Scale	Percent
A	90% and above
B	80 to 89.9%
C	70 to 79.9%
D	60 to 69.9%
F	59.9% and below

**Late Assignments:** A 25% deduction will be taken off for each day that an assignment is late, beginning immediately after it is due.

**Attendance:** Attendance of lectures and labs is necessary to best understand class material. Students are encouraged to attend unless an absence is absolutely necessary and are responsible for all material covered in class during an absence.

**Make-up Policy:** **Quizzes and exams may be made-up ONLY if the absence is excused by the instructor.** Alternate versions of quizzes and exams may be used for make-ups. Examples of excused absences include University-sponsored events (e.g. judging team) and extreme illnesses (with doctor's note). **The instructor should be notified of all absences involving a quiz or exam (unless an emergency) BEFORE they occur (at least 1 week for pre-planned absences). Quizzes or exams without an excused absence will result in 0 points for that grade.**

**Students are responsible for all lab material and assignments during absences.** After a lab absence, students should make an appointment to see the instructor for the problem set or other materials from that day. Problem set due dates will not be changed because of absences, except in extreme cases.

**Discussion question and participation point make-ups will be allowed ONLY when the student discusses these directly with the instructor via meeting or email, and are subject to the instructor's judgment.**

**Syllabus Changes:** Sometimes during the semester changes occur; thus the content of this syllabus, including dates and assignments, are subject to change. Any changes will be distributed via email, eCompanion, and class announcement.

**Technology Policy:** **All cell phones should be silent and out of your hands during class.** No distracting technology use (texting, checking email or Facebook, etc.) is permitted.

**Disability Statement:** If you have a physical, sensory, cognitive, or psychological disability and require accommodations, please let the instructor know as soon as possible. You will need to register with, and provide documentation of your disability to, University Disability Support Services (UDSS) in SEO Room 109 or 330 Knight Hall.

**Academic Dishonesty:** Students may be encouraged to work together on laboratory assignments or lecture discussion work, but all students are expected to turn in their own work. **ANY form of dishonesty or misrepresentation (e.g. cheating, plagiarism, fraud) is unacceptable and will result in 0 points for that grade.** Students who practice academic dishonesty will be dealt with according to UW regulations.

Academic Dishonesty is defined as “An action attempted or performed that misrepresents one’s involvement in an academic endeavor in any way, or assists another student in misrepresenting his or her involvement in an academic endeavor.” Examples: plagiarism, cheating, fraud, violation of standards, multiple submissions, interference or obstruction, and complicity.

See UW Regulation 6-802 for details:

[http://www.uwyo.edu/generalcounsel/\\_files/docs/UW-Reg-6-802.pdf](http://www.uwyo.edu/generalcounsel/_files/docs/UW-Reg-6-802.pdf)

**Lecture topics (roughly in order):**

- Nutrient classes (review)
- Digestion and absorption of nutrients (review)
- Ruminant metabolism (review)
- Nutrient requirements
  - Energetics
  - Thermoregulation
  - Energy reserves
  - Physiological stages
- Feed classes
  - Energy dense carbohydrates
  - Protein feeds
  - Lipid feeds
  - Feed processing
  - Co-product feeds
  - Forages and roughages
  - Minerals
  - Vitamins
  - Feed additives
- Putting it all together
  - Grazing systems/Pastures
  - Range management
  - Silage production
  - Supplementation of grazing livestock
  - Metabolic problems
  - Nutrient management
  - Careers in Animal Nutrition/Feed Industry

**Lab topics:**

- Basic nutritional calculations
- NRC overview
- Ration balancing 1 and 2
- Feedstuff ID
- Gastrointestinal tract dissection
- Nutrient analysis/Forage testing
- Feed tags/Feed laws
- Evaluating rations
- Determining feed cost
- Designing and evaluating mineral and vitamin supplementation
- Designing and evaluating energy and protein supplements for grazing livestock