

Animal Nutrition Lab

11:067:331

Fall 2022

Where: Foran 104 (all sections)

When: Section 1: Monday 2:00 pm-5:00 pm - Josh

Section 2: Tuesday 10:20 am-1:20 pm - Yeva

Section 3: Tuesday 2:00 pm-5:00 pm - Tommy

Section 4: Wednesday 10:20 am-1:20 pm - Nadja

Section 5: Wednesday 2:00 pm-5:00 pm – Kuhelika

Text: Recommended: Basic Animal Nutrition and Feeding; by Pond, Church, Pond, and Schoknecht, 5th edition (2005), John Wiley. Other readings assigned in class.

Course web page: Course material can be accessed on the Canvas page

Grading: Grades will be distributed as follows:

In-class/homework assignments: 50%

Quizzes: 30%

Draft lab report sections: 10%

Final lab report: 10%

The lowest quiz score will be dropped. There will be no lab practical.

Grading Scale:

A: 100-88.0%

B+: <88.0-80.0%

B: <80.0-75.0%

C+: <75.0-70.0%

C: <70-65%

D: <65-60%

F: <60.0%

Late Work Policy: Late assignments will be docked 10% per day. After 5 days, the assignment may be turned in at any time for 50% of what the original grade may have been. Please talk to your TA prior to the due date for deadline extensions.

Attendance: If students find that they will not be able to attend their section for University Approved Reasons, they must contact Hank Bignell to discuss other options. Unapproved absences will result in a zero for the lab assignment.

Instructors:

Dr. Barry Jesse

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Meetings by appointment

Professor Henry Bignell
henry.bignell@rutgers.edu
Meetings by appointment

Teaching assistants:

Thomas Degroat
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Meetings by appointment

Joshua Corris
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Meetings by appointment

Yeva Shamailova
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Meetings by appointment

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Office Hours: Tuesday, 12:30-2:30 Bartlett 309

Kuhelika Mali
km1548@scarletmail.rutgers.edu
Meetings by appointment

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

1. Identify the major feedstuffs used in animal diet formulation
2. Apply basic nutrition principles to conduct a successful feeding trial
3. Determine the nutrient requirements of animals in different physiological states
4. Use this information to balance a ration

Undergraduate teaching assistants:

If you're interested in serving as an undergraduate TA in future semesters, you will need to enroll in the 11:067:411 Studies in Animal Science course. You will also need:

1. A grade of B or better in **both** Animal Nutrition lecture and lab
2. A cumulative GPA of 3.000 or higher
3. A letter of support from your graduate TA recommending you for the position

Being an undergraduate TA is a great opportunity to gain some teaching experience and bolster your resume. Additionally, you will gain 1.5 experience-based credits. If you are interested, please ask your graduate TA to provide you with a recommendation before spring classes start. Students who are selected will be notified prior to preregistration for the fall semester so they can adjust their class schedules accordingly.

Schedule of classes:

Week	Date	Topic	Complete before class	During class	Assignment due dates
1	Sep. 12, 13, or 14	Introduction to feedstuffs and NRC tables	Read “Intro to feedstuffs and NRC tables” protocol	Lecture on intro to feedstuffs In-class assignment utilizing NRC tables and forage analysis report	End of class: Intro to Feedstuffs and NRC Tables In-class assignment
2	Sep. 19, 20, or 21	Poultry nutrition & introduction to chicken growth trial	Read “Poultry nutrition & intro to chicken growth trial” protocol	Lecture on growth trials and poultry nutrition Visit the brooder barn, assign times to feed/weigh	Before Class: Quiz 1 End of class: Sign up for volunteer slots for the growth trial
3	Sep. 26, 27, or 28	Turning plants into feeds	Read “Turning plants into feeds” protocol Review optional video	Lecture on silage, WSCs, and making a standard curve Generate silage	Before Class: Quiz 2
4	Oct. 3, 4, or 5	Introduction to feed math and dry matter determination	Read “Intro to feed math and dry matter determination” protocol	Lecture on feed math and dry matter determination In-class assignment on feed math, percentages, and unit conversion	Before Class: Quiz 3 End of class: Introduction to Feed Math In-class assignment
5	Oct. 10, 11, or 12	Swine nutrition & Ration Balancing	Read “Swine nutrition” protocol	Lecture on swine nutrition, balancing rations, and solving two simultaneous equations In-class assignment balancing rations by hand	Before Class: Quiz 4 End of class: Swine Nutrition In-class Assignment
6	Oct. 17, 18, or 19	Turning Plants into Feeds Reprise	Read “Turning plants into Feeds Reprise” protocol Review optional video	Lecture on WSC assay Conduct WSC assay with silage Generate standard curve with data	Before Class: Quiz 5 & Swine Nutrition Homework End of Class: Turning Plants into

					Feeds Reprise In-class assignment
7	Oct. 24, 25, or 26	Growth Trial Reprise	Read “Growth Trial Reprise” protocol	Lecture on analyzing data Compile class data In-class assignment of growth trial data	Before Class: Quiz 6 End of class: Growth Trial Reprise In-class assignment
8	Oct 31, Nov 1, or 2	Exploring digestion and gastrointestinal tract anatomy	Read “Exploring digestion and GI tract anatomy” protocol Review optional videos	Lecture on GI tract anatomy in rats, rabbits, and birds Dissection of GI tract of rat, rabbit, and chicken	Before Class: Quiz 7 & Results Section Draft End of class: In-class assignment
9	Nov. 7, 8, or 9	Ruminal development & dairy cattle nutrition	Read “Ruminal development & dairy cattle nutrition” protocol	Lecture on ruminal development & dairy cattle nutrition In-class assignment balancing rations via Spartan Dairy	Before Class: Quiz 8 & Discussion Section Draft End of class: In-class assignment
10	Nov. 14, 15, or 16	Beef cattle & sheep nutrition	Read “Beef cattle & sheep nutrition” protocol Review videos	<i>Meet at the Roundhouse</i> Visit Hyacinth at the farm & observe ruminal microbes Body condition scoring of cattle demonstration	Before Class: Quiz 9 End of class: In-class assignment
11	Nov. 28, 29, or 30	Equine nutrition	Read “Equine nutrition” protocol	Lecture on key principles of equine nutrition In-class Assignment	Before Class: Quiz 10 End of class: In-class assignment
12	Dec. 5, 6, or 7	Companion animal nutrition	Read “Companion animal nutrition” protocol	Lecture on key concepts in formulating and selling diets for companion animals In-class assignment	Before Class: Quiz 11 & Final Lab Report End of class: In-class assignment