

ANIMAL NUTRITION LAB

11:067:331

Fall, 2020

Where: All Sections: Synchronous Remote using Canvas

When: Section 1 - Monday, 1st & 2nd period (9:15 AM -12:15 PM) – Ellen Rankins
Section 2 - Monday, 4th & 5th period (2:15 - 5:15 PM) – Eli Berger
Section 3 - Tuesday, 1st & 2nd period (9:15 AM - 12:15 PM) – Thomas Degroat & Joshua Corris
Section 4 - Tuesday, 3rd & 4th period (12:35 - 3:35 PM) – Aditi Badrinath
Section 5 – Tuesday, 5th & 6th period (3:55 AM – 6:55 PM) – Dushyant Kshatriya

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

Course web page: Animal Nutrition Lab material will be distributed via Canvas (canvas.rutgers.edu).

Grading: Course grading will be based on the following criteria:

In-class & homework assignments	40%
Quizzes	30%
Draft lab report sections	10%
Final version lab report	20%

Your lowest quiz score will be dropped.

Instructor:

Dr. Barry Jesse

(848) 932-9095

By appointment

barry.jesse@sebs.rutgers.edu

Teaching Assistants:

Aditi Badrinath

By appointment

ab1487@scarletmail.rutgers.edu

Eli Berger

By appointment

gsb78@scarletmail.rutgers.edu

Dushyant Kshatriya

By appointment

dsk118@scarletmail.rutgers.edu

Joshua Corris

By appointment

jdc254@scarletmail.rutgers.edu

Thomas Degroat

By appointment

tjd175@scarletmail.rutgers.edu

Ellen Rankins

Student Hours: Wed. 9-10AM & Thurs. 1-2PM

ellen.rankins@rutgers.edu

Course Learning Goals: By the end of the course you will have:

- 1) learned how to identify the major feeds used in animal diet formulation,
- 2) learned how to apply basic nutrition principles necessary for a successful feeding trial,
- 3) become familiar with, and will be able to determine, the nutrient requirements of animals in different physiological states, and
- 4) use that information to formulate balanced rations for those animals.

Undergraduate Teaching Assistants:

If you are interested in serving as an undergraduate TA in future semesters, this is an opportunity for you to get some teaching experience, and add another bit of eye-catching background information to your resume. In addition, you enroll for 1.5 credits in 11:067:411 Studies in Animal Science that also count towards your experience-based education requirement.

To participate as an Undergrad TA for Animal Nutrition Lab in the future, you must have:

- Grades of B or better in **BOTH** Animal Nutrition lecture and lab.
- A cumulative GPA of 3.000 or higher.
- A letter of support from your graduate TA recommending you for the position.

You must also be able to work your class schedule around one of the Animal Nutrition Lab sections. If you are interested in doing this, please ask your graduate TA to provide a recommendation to me by the time that spring classes start. Students who are selected will be notified prior to preregistration for the following fall semester so that they can adjust their class schedule accordingly.

Schedule of Classes:

Week #	Date	Topic	Complete Before Class	During Class	Assignment Due Dates
1	Sept. 14 or 15	Introduction to Feedstuffs & NRC Tables	Read Intro to Feedstuffs & NRC Tables Protocol Print or download NRC tables & forage analysis report	Lecture on Introduction to Feedstuffs & NRC Tables Use NRC tables & forage analysis report to complete Intro to Feedstuffs & NRC Tables Assignment	End of class: Intro to Feedstuffs & NRC Tables Assignment
2	Sept. 21 or 22	Introduction to Chicken Growth Trial	Read Intro to Chicken Growth Trial Protocol	Lecture on Introduction to Chicken Growth Trial Use assigned articles to complete in-class discussion	11:59PM on Fri., Sept. 25: Quiz - Intro to Feedstuffs & NRC Tables and Intro to Chicken Growth Trial
3	Sept. 28 or 29	Turning Plants Into Feeds	Read Turning Plants Into Feeds Protocol	Lecture on Turning Plants Into Feeds Use data provided to generate a standard curve and complete the Turning Plants Into Feeds Assignment	End of class: Turning Plants Into Feeds Assignment & Standard Curve 11:59PM on day of lab: Draft of Lab Report Methods Section
4	Oct. 5 or 6	Exploring Digestion & Gastrointestinal Tract Anatomy	Read Exploring Digestion & G.I. Tract Anatomy Protocol	Lecture on Exploring Digestion & G.I. Tract Anatomy Complete Exploring Digestion & G.I. Tract Anatomy Assignment	End of class: Exploring Digestion & G.I. Tract Anatomy Assignment 11:59PM on Fri., Oct. 9: Quiz – Turning Plants Into Feeds and Exploring Digestion & G.I. Tract Anatomy

5	Oct. 12 or 13	Growth Trial Reprise	Read Growth Trial Reprise Protocol Review Data Analysis Video (optional)	Lecture on Growth Trial Reprise Complete Growth Trial Data Sheet Complete Growth Trial Reprise Homework	11:59PM on day of lab: Draft of Lab Report Introduction Section Before next class: Growth Trial Reprise Homework
6	Oct. 19 or 20	Introduction to Feed Math and Dry Matter Determination	Review Percentages & Unit Conversions Read Intro to Feed Math & Dry Matter Determination Protocol Turn-in before class: Percentages & Unit Conversions Pre-Class Assignment	Lecture on Intro to Feed Math & Dry Matter Determination Complete Intro to Feed Math & Dry Matter Determination Assignment	End of class: Intro to Feed Math and Dry Matter Determination Assignment 11:59PM on Fri., Oct. 23: Quiz – Growth Trial Reprise and Intro to Feed Math & Dry Matter Determination
7	Oct. 26 or 27	Companion Animal Nutrition	Read Companion Animal Nutrition Protocol Watch Companion Animal Nutrition Video	Review key principles of companion animal nutrition Complete Companion Animal Nutrition Assignment	End of class: Companion Animal Nutrition Assignment 11:59PM on day of lab: Draft of Lab Report Results Section Before next class: Companion Animal Nutrition Homework
8	Nov. 2 or 3	Swine Nutrition	Read Swine Nutrition Protocol Watch Swine Nutrition Video Review Solving Simultaneous Equations (optional) Turn-in before class: Review NRC Tables Pre-Class Assignment Download or print Swine NRC Tables (Nutrient Composition & Requirements)	Review key principles of swine nutrition Ration balancing demonstration Complete Swine Nutrition Assignment	End of class: Swine Nutrition Assignment 11:59PM on Fri., Nov 6: Quiz – Companion Animal Nutrition and Swine Nutrition
9	Nov. 9 or 10	Equine Nutrition	Read Equine Nutrition Protocol Watch Equine Nutrition Video Review In-Class	Review key principles of equine nutrition Online ration balancing demonstration	End of class: Equine Nutrition Assignment 11:59PM on day of lab: Draft of Lab Report Discussion Section

			Discussion Questions	Complete Equine Nutrition Assignment	
10	Nov. 16 or 17	Dairy Cattle Nutrition	<p>Read Dairy Cattle Nutrition Protocol</p> <p>Watch Dairy Cattle Nutrition Video</p> <p>Read Spartan Dairy 3 Guided Tour & Tutorial</p> <p>Download and install Spartan Dairy 3</p> <p>Review In-Class Discussion Questions</p>	<p>Review key principles of dairy nutrition</p> <p>Spartan Dairy 3 demonstration</p> <p>Complete Dairy Cattle Nutrition Assignment</p>	<p>End of class: Dairy Cattle Nutrition Assignment</p> <p>11:59PM on day of lab: Draft of Lab Report Title and Abstract</p> <p>Before next class: Swine Ration Balancing Homework</p>
11	Nov. 23 or 24	Beef Cattle & Sheep Nutrition; Introduction to Least Cost Ration Balancing	<p>Read Beef Cattle & Sheep Nutrition; Intro to Least Cost Ration Balancing Protocol</p> <p>Watch Beef Cattle & Sheep Nutrition; Intro to Least Cost Ration Balancing Video</p>	<p>Review key principles of beef cattle & sheep nutrition</p> <p>Ration balancing demonstration</p> <p>Complete Beef Cattle Nutrition with Intro to Least Cost Ration Balancing Assignment</p>	<p>11:59PM on Fri., Nov 27: Quiz – Equine Nutrition, Dairy Cattle Nutrition, and Beef Cattle & Sheep Nutrition; Intro to Least Cost Ration Balancing</p> <p>Before next class: Beef Cattle Nutrition with Intro to Least Cost Ration Balancing Assignment</p>
12	Nov. 30 or Dec. 1	Wildlife & Exotic Animal Nutrition	<p>Read Wildlife & Exotic Animal Nutrition Protocol</p> <p>Watch Wildlife & Exotic Animal Nutrition Video</p>	<p>Review key principles of wildlife & exotic animal nutrient</p> <p>Complete Wildlife & Exotic Animal Nutrition Assignment</p>	<p>End of class: Wildlife & Exotic Animal Nutrition</p> <p>11:59PM on day of lab: Lab Report</p>
13	Dec. 7 or 8	Least Cost Ration Balancing	<p>Read Least Cost Ration Balancing Protocol</p> <p>Watch Least Cost Ration Balancing Video</p> <p>Download Least Cost Ration Balancing Excel Sheet</p> <p>Install solver add-in</p>	<p>Review key principles of least cost ration balancing</p> <p>Complete Least Cost Ration Balancing Assignment</p>	<p>End of class: Least Cost Ration Balancing Assignment</p> <p>11:59PM on Thurs., Dec. 10: Watch Exotic Animal Nutrition Interview & complete short quiz</p> <p>11:59PM on Thurs., Dec. 10: Quiz – Wildlife & Exotic Animal Nutrition and Least Cost Ration Balancing</p>