

Course Format:

Lecture: M and W
3:00 – 4:15 PM
Room 103 Eddy

Professor: John J. Wagner, Ph.D.

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Office hours: M, W, F
11:00 – 11:50 AM
Or by appointment.

Course Description:

Diet formulation expertise is an important skill for students interested in pursuing careers in animal nutrition. In this course students will study comparative diet formulation strategies for cattle (beef and dairy), equine, swine, and poultry. Students will utilize sophisticated commercially available computer software to formulate diets and predict performance.

Course Objectives:

Students will:

1. Become proficient in diet and supplement formulation for livestock species.
2. Become familiar with the NRC Nutrient Requirement Series.
3. Be able to analyze feed assay reports and nutrient composition tables.
4. Be able to differentiate between nutrient requirements and nutrient allowances.
5. Develop skills required to manage large data sets.
6. Become familiar with Federal and State Feed Additive and Feed Industry regulations.

Text and Materials:

Students will be required to bring a notebook computer to class. Dalex Livestock Solutions, LLC will be providing a copy of *CN.Dalex*, the latest version of their widely used ration balancing software *The Consulting Nutritionist*, for each student to use in the class. Minimum requirements to run *CN.Dalex* include Windows 7, an i5 processor and 4 gbs of RAM. Apple computers will work but will require the installation of “Parallel” and “Windows”. Make certain all of your windows updates and virus protection programs are current. For more information on Dalex Livestock Solutions, LLC and *CN.Dalex*, please visit their web-site at: <http://www.dalex.com/about/> .

ANEQ420 Applied Animal Nutrition – Computer Diet Formulation Fall 2017

Please **do not** contact Dalex Livestock Solutions, LLC directly for your version of the program. We will be installing the program as a class during the first 2 weeks of the semester. Once the program is installed, please **do not** contact Dalex Livestock Solutions, LLC on your own for technical support. Bring your problems to my attention and I will help you. Plus, we will be working together on technical issues in class.

There will be no required text book for the course. We will be referring to the nutrient requirement series of publications that are published by the National Research Council. Students are encouraged to purchase one of these publications covering their species of greatest interest: Beef Cattle (2016), Dairy Cattle (2001), Small Ruminants (2007), Horses (2007), Swine (2012), Poultry (1994), or Dogs and Cats (2006).

Power point slides, Journal Manuscripts, Extension Fact Sheets, articles appearing in Producer Periodicals, and additional information may be distributed in class or through Canvas. Every effort will be made to provide copies of this related material prior to each lecture.

Important Dates for Lecture and Lab

The schedule of topics listed in the following schedule may shift slightly due to scheduling conflicts and the progress that we make as a class.

Day	Date	Lesson	Topic
M	21 Aug	Course Introduction. Lesson 1: Lesson 2:	Introductions, Canvas, Syllabus, Grading. NRC Nutrient Requirement Series. Introduction to Diet Formulation.
W	23 Aug	Lesson 2:	Introduction to Diet Formulation. HW 1 Assigned.
M	28 Aug	Lesson 3:	HW 1 Due. Introduction to Least-Cost Diet Formulation.
W	30 Aug	Lesson 4:	Introduction to Diet Formulation Software. Setting up the system. HW 2 Assigned.
M	04 Sep	Labor Day	University Holiday
W	06 Sep	Lesson 4:	Setting up the system.
M	11 Sep	Lesson 5:	HW 2 Due. Beef Feedlot Diets.
W	13 Sep	Lesson 5:	Beef Feedlot Diets. HW 3 Assigned.
M	18 Sep	Lesson 5:	HW 3 Due. Beef Feedlot Diets.
W	20 Sep	Lesson 5:	Beef Feedlot Diets. HW 4 Assigned.
M	25 Sep	Lesson 6:	HW 4 Due. Beef Cow-calf Diets.
W	27 Sep	Lesson 6:	Beef Cow-calf Diets. HW 5 Assigned.
M	02 Oct	Lesson 6:	HW 5 Due. Beef Cow-calf Diets.
W	04 Oct	Lesson 6:	Beef Cow-calf Diets. HW 6 Assigned.
M	09 Oct	Lesson 7:	HW 6 Due. Dairy Cattle Diets.

W	11 Oct	Lesson 7:	Dairy Cattle Diets. HW 7 Assigned.
M	16 Oct	Lesson 7:	HW 7 Due. Dairy Cattle Diets.
W	18 Oct	Lesson 7:	Dairy Cattle Diets. HW 8 Assigned.
M	23 Oct	Lesson 8:	HW 8 Due. Equine Diets.
W	25 Oct	Lesson 8:	Equine Diets. HW 9 Assigned.
M	30 Oct	Lesson 8:	HW 9 Due. Equine Diets.
W	01 Nov	Lesson 8:	Equine Diets. HW 10 Assigned.
M	06 Nov	Lesson 9:	HW 10 Due. Swine Diets.
W	08 Nov	Lesson 9:	Swine Diets. HW 11 Assigned.
M	13 Nov	Lesson 9:	HW 11 Due. Swine Diets.
W	15 Nov	Lesson 9:	Swine Diets. HW 12 Assigned.
Sa - Su	18 – 26 Nov	Fall Break	University Holidays
M	27 Nov	Lesson 10:	HW 12 Due. Poultry Diets.
W	29 Nov	Lesson 10:	Poultry Diets. HW 13 Assigned.
M	04 Dec	Semester Project:	HW 13 Due. Semester project presentations.
W	06 Dec	Semester Project:	Work on semester project presentations. Course Evaluation.
		Final Exam Date	Semester Project Due.
TU	19 Dec		Final Grades Due
W	20 Dec		Fall grades available on RAMweb.

Grading Scale:

Percent	Guaranteed Grade
≥ 90.0	A
87.0 – 89.9	B+
80.0 – 86.9	B
77.0 – 79.9	C+
70.0 – 76.9	C
60.0 – 69.9	D
≤ 59.9	F

Grading Policy Comments:

1. Grades will be posted regularly on Canvas.
2. Percentages will be rounded to the nearest 0.1%.

3. There will be NO curve.
4. It is YOUR responsibility to obtain any information announced or material presented in class.
5. Due dates will be given on all assignments. **NO LATE ASSIGNMENTS WILL BE ACCEPTED** without a valid excuse that has been **cleared in advance** by Dr. Wagner.
 - a. Valid excuses:
 - i. Medical emergency—a written and signed note from a medical doctor is required.
 - ii. Participation in a CSU-sanctioned activity—a letter from the supporting faculty is required **PRIOR** to the absence.
 - b. **Students who do not have a valid excuse will receive a zero.**
6. Students will have a **one-week** period following the return of any assignments to resolve any questions regarding grading. After that time period, all grades are final. Additionally, if there are concerns over the grading, the entire assignment may be subject to re-grading.
7. You should retain all graded items until a final course grade is assigned.
8. Cheating will result in removal from the course and assignment of an ‘F’ for the course grade.

Point Distribution				
Item	Points per Item	Total Items	Total Points	Percent of Total
Homework Assignments	50	13	650	65.0
Semester Project	350	1	350	35.0
Total Points			1000	100.0