*Reedley College Animal Science Program*

Course Syllabus Spring 2023

**Class Name & Number:** AS 5 – Animal Nutrition – Section 50107

**Units: 3.0** (2-hour lecture 3-hour lab)

**Instructor Information:**

Desiree Molyneux M.S.

Email: desiree.molyneux@reedleycollege.edu

Phone: 559-638-0300 ext. 3283

Office hours: Monday 11:00 – 12:00 & 1:00 – 3:00 Thursday 1:00-3:00 & Friday 11:00 – 12:00

**Class Meetings:**

 Lecture: Monday & Wednesday 10:00 – 10:50 a.m. AGR 15

 Lab: Wednesday 12:00 – 2:50 AGR 15 & Pavilion

**Holidays:**

Holidays will be observed as per the State Center Community College District

January 16th Martin Luther King, Jr. Observed

February 17th Lincoln Day Observed

February 20th Washington Day Observed

April-3th – 7th Spring Break

**Drop Deadline:**

January 20th last day to drop with full refund; January 27th last day to drop a class on WebAdvisor to avoid a W; January 27th last day to add class; **March 10th** last day to drop the class with W, after that grade must be given.

**Final Exam:** Wednesday May 17th 10:00 am – 11:50

**Prerequisite:** None

**Text & Other Course Material:**

 Animal Feeding & Nutrition Jergens& Bregendahl, 11th Edition

 Kendal/Hunt Publishing Company, ISBN 978-0-7575-9113-6

 \*iCEV account

 \*Supplemental References –Animal Industry Trade Magazines & numerous internet sites.

 \*Students will be asked to provide feed samples for some labs

I strongly encourage you to purchase this book. This book will have valuable information if you ever plan to develop rations for your own heard.

 **Grading Policy:**

Writing Assignment, homework, lab assignments and participation, class participation, quizzes, research papers and exams.

 Grading Scale:

 **A** = 90-100% **B** = 80-89% **C** = 70-79% **D** = 60-69% **F** = ≤ 59%

There will be no make-up of any missed quizzes, exams and assignments. If you must miss please arrange with the instructor in advance.

**Attendance Requirements:**

 Attendance is required since most of the learning occurs in the lecture/laboratory activities.

* Student are responsible for obtaining the notes and information missed due to an absence from the instructor or fellow student
* College policy dictates that an instructor should drop a student with two consecutive weeks of unexcused absence.
* At the end of the ninth week of instruction no withdrawals are permitted and a student must receive a grade.
* Please refer to the Website, campus email and Canvas regularly to be notified of any canceled classes

 **Behavioral Standards:**

 All students are expected to act in a mature, responsible manner that respects the rights of all students, instructors, staff and guests of Reedley College. All cellphones and other electronic devices must be turned off and put away during lecture and lab.

**Cheating and Plagiarism:**

 In compliance with SCCCD board policy 5410, each student is expected to extend an entirely honest effort toward attaining an education. Violations of this policy will result in disqualification for the course.

**Accommodations for Students:**

 If you have a verified need for an academic accommodation or materials in an alternate media (i.e. Braille, large print, electronic text, etc,) per the Americans with Disability Act (ADA) or section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Course Description:**

This course covers the fundamental anatomy and physiology of digestion and absorption in both ruminant and non-ruminant species of livestock. Emphasis is placed on the role of nutrients in maximizing animal health and performance, the nutritive analysis of various common feedstuffs, and the formulation of balanced rations for cattle, sheep, swine, horses and poultry. ADVISORIES: Mathematics 45 and English 1A or 1AH. (A, CSU)

**Student Learning Outcomes:**

1 **Apply sound feeding practices to both ruminant and non-ruminant species of livestock.**

2 **Identify and classify common feedstuffs utilized for livestock.**

3 **Identify the anatomical parts and function of the gastrointestinal tract of livestock.**

**Learning Objectives:**

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| *In the process of completing this course, students will:* |
|   | * Explain the role of nutrition in providing optimal animal health and performance.
* Evaluate career opportunities and requirements for successful employment in the animal nutrition industry.
* Identify and explain the functions of the key anatomical features of the ruminant and monogastric digestive systems.
* Identify samples of various concentrates, roughages, forages, by-products, and feed supplements commonly used in the animal nutrition industry.
* Discuss the various methods of feed analysis commonly utilized in the animal nutrition industry.
* List and define the six categories of nutrients.
* Compare and contrast the digestive processes in ruminant and monogastric species.
* Interpret National Research Council (NRC) nutrition tables and apply the relevant information to the formulation of livestock rations.
* Interpret the components of the guaranteed analysis found on a feed tag.
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**Lecture & Laboratory Topics:**

***Lecture:***

A. Concepts of Nutrition
  1. Historical advancements
  2. Animal nutrition and its role in society
B. Feed Analysis and Source
  1. Protein
  2. Carbohydrates
  3. Fats
  4. Vitamins
  5. Minerals
  6. Water
C. Animal Growth, Composition and Variability
  1. Water
  2. Energy
  a. Carbohydrates
   b. Fats
  3. Proteins
  4. Inorganic elements
  5. Vitamins
D. The Gastrointestinal Tract
  1. Types of gastrointestinal tract
   a. Ruminant
   b. Monogastric
  c. Modified mono gastric
  2. The role of G.I. secretions in the digestive process
  3. Digestion and absorption
  4. Transport of nutrients after catabolism
  5. Fecal and urinary excretions

E. Nutrient Metabolism
  1. Water
  2. Carbohydrates
  3. Lipids
  4. Proteins
  5. Inorganic minerals
   a. Macro or primary elements
   b. Micro or trace elements
   c. Toxic elements and symptoms
  6. Vitamins
   a. Fat soluble
   b. Water soluble
F. Applied Nutrition
  1. Feeding standards and productivity
  2. Feedstuff
  3. Preparation and processing
  4. Ration formulations
  5. Non-caloric performance enhancers
G. Feeding Practices
  1. Beef cattle
  2. Dairy cattle
  3. Sheep
  4. Swine
  5. Horses
  6. Goats

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| ***Lab Topics:*** |
|   | * Identification of Feedstuffs
* Feeds Analysis Procedures
* Understanding of the Monogastric Digestive System
* Understanding of the Ruminant Digestive System
* Tour of feed industries \*\*
* Preparation of Livestock Rations
* Application of Basic Feeding Practices
* Understanding the growing, maintenance and harvest of forage crops for livestock.
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