College of the Sequoias
COLLEGE ASSOCIATE DEGREE COURSE OUTLINE

SUBJECT AREA AND COURSE NUMBER: ASCI 103

COURSE TITLE: ANIMAL NUTRITION

Units: 3

TOP Code: 0102.00 - Animal Science

Cross-Listed Courses:

CATALOG COURSE DESCRIPTION:

In this course, the theories and fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feeds as they relate to formulation of livestock rations are emphasized.

REQUISITES:

NONE

FIELD TRIP REQUIREMENTS: Not Required

LECTURE HOURS PER WEEK: 2.5

TOTAL LECTURE HOURS PER SEMESTER: 43.75

LAB HOURS PER WEEK: 1.5

TOTAL LAB HOURS PER SEMESTER: 26.25

ACTIVITY HOURS PER WEEK:

TOTAL ACTIVITY HOURS PER SEMESTER:

TOTAL HOURS PER WEEK: 4

TOTAL CONTACT HOURS PER SEMESTER: 70

GRADING: S - Standard Grading A-F

REPEATABLE: A - Not designed as repeatable

TRANSFERABLE:

*Approved* CSU BA Transferable (1-199 level)

YES

METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to, the following:

* Laboratory
* Lecture and/or Discussion

METHODS OF EVALUATION:

A student's grade will be based on multiple measures of performance unless the course requires no grade. Multiple measures may include, but are not limited to, the following:
Problem solving assignments or activities
Written essays or extended papers
Multiple choice tests
Short answer quizzes or exams

COURSE TOPICS:

Outline Of Topics:
The following topics are included in the framework of the course but are not intended as limits on content. The order of presentation and relative emphasis will vary with each instructor.

Unit One: Concepts of Nutrition
a. Historical Advancements
b. Animal Nutrition and Its Role in Society

Unit Two: Feed Analysis and Source
a. Protein
b. Carbohydrates
c. Fats
d. Vitamins
e. Minerals
f. Water

Unit Three: Animal Growth, Composition and Variability
a. Water
b. Energy
   1. Carbohydrates
   2. Fats
c. Proteins
d. Inorganic Elements
e. Vitamins

Unit Four: The Gastrointestinal Tract
a. Types of G.I.T.
   1. Ruminant
   2. Monogastric
   3. Modified Monogastric
b. The role of G.I. secretions in the Digestive Process
c. Digestion and Absorption
d. Transport of Nutrients After Catabolism
e. Fecal and Urinary Excretions

Unit Five: Nutrient Metabolism
a. Water
b. Carbohydrates
c. Lipids
d. Proteins and Amino Acids
e. Inorganic Minerals
   1. Macro or Primary Elements
   2. Micro or Trace Elements
   3. Toxic Elements and Symptoms
f. Vitamins
   1. Fat soluble
   2. Water soluble

Unit Six: Applied Nutrition
a. Feeding Standards and Productivity
b. Feedstuffs
c. Preparation and Processing
d. Ration Formulations
e. Non-caloric Performance Enhancers
Unit Seven: Feeding Practices

a. Beef cattle
b. Dairy cattle
c. Sheep
d. Swine
e. Horses

OUTCOMES:
Course Objectives
The main concepts for this course will ask students to...

1. Formulate rations with economic feasibility.
2. Identify cultural inputs that have shaped the livestock nutrition industry.
3. Identify the role of livestock feeding and its part in human nutrition.
4. Demonstrate and comprehend animal behavior as it relates to feeding practices.
5. Explain, in a verbal and written format, the role of nutrition in animal health and ultimately food safety.
6. Define and recall biological and inorganic factors that impact the feeding and nutrition industry.
7. Identify various primary and by-product feeds, forms and processing techniques.
8. Apply changing nutritional requirements based upon animal physiological development.
10. Collect and calculate data used in ration formulation.

Student Learning Outcomes
Given commodity information, students will be able to calculate least-cost rations for ruminant and non-ruminant livestock scenarios, to a level that is industry standard.

Problem solving assignments or activities
Written essays or extended papers
Multiple choice tests
Short answer quizzes or exams

Given a livestock feeding scenario, students will be able to identify appropriate feedstuffs for accomplishing necessary product outputs, to a level that is industry standard and approved.

Problem solving assignments or activities
Written essays or extended papers
Multiple choice tests
Short answer quizzes or exams

Given anatomy and physiology of a beef, sheep, swine or dairy animal, students will be able to identify and explain the structure, functions and process of ruminant and non-ruminant digestion, to 80% accuracy.

Problem solving assignments or activities
Written essays or extended papers
Multiple choice tests
Short answer quizzes or exams

Given a sample feed, students will be able to calculate the nutritional values for use within a livestock feeding scenario. Students will demonstrate proficiency by completing a written exam with 70% or higher accuracy.

Problem solving assignments or activities
Written essays or extended papers
Multiple choice tests
Short answer quizzes or exams

Institutional Outcomes
1. Use appropriate creative and analytic methods to interpret ideas, solve problems, and present conclusions.
2. Apply quantitative and symbolic reasoning to obtain objective solutions to problems and equations.
3. Locate, evaluate, and use information from a variety of sources to take action or make a decision.

Assignments
Lab Content:
Lab Content

In a lab activity, students will be asked to evaluate the palatability, nutritional value, and economic feasibility of various feeds for specific livestock production scenarios. They will have to orally justify why/why not a feed would be suitable for the animal in question.

TEXTS AND SUPPLIES:
Textbooks may include, but are not limited to:

TEXTBOOKS:

MANUALS:

PERIODICALS:

MATERIALS FEE: $0

OTHER:

Honors Course Outline Addendum

ORIGINATOR: Bob Britton

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