

ANSC 22100 - ANIMAL NUTRITION



College of Agriculture

PRINCIPLES OF ANIMAL NUTRITION

Principles of Animal Nutrition deals with classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

In this single course, learn all aspects of nutrition for domestic animals, from fundamentals of nutrition through feeds and feeding. The principles apply to all mammalian and avian species, but there will be an emphasis on swine, beef cattle, dairy cattle, poultry and horses. Feeds most commonly used in the United States will be emphasized, but feeds and principles of their use that are important to animals throughout the world will be considered. Computerized ration-balancing techniques are highlighted in addition to the principles of ration formulation by hand methods.

COURSE AT A GLANCE

Modality: Self-paced

Tuition: In-state: \$1,043.55
Out of state: \$1,537.14

Credits: Three

THROUGH THIS COURSE, STUDENTS WILL LEARN ABOUT:

- » The nutrients needed by animals, and the deficiency symptoms resulting from their lack.
- » The digestive processes of animals of various types, ruminants, nonruminants, and non-ruminant herbivores, to obtain the nutrients.
- » How to evaluate feeds for their nutrient content.
- » Where the nutrients come from (feeds), and what feeds to feed for what purposes and to what animals.
- » How to balance rations by various methods appropriate to the species and quantitatively provide the nutrients.

MEET THE INSTRUCTOR



Dr. Dale M. Forsyth is an Associate Professor in Animal Sciences, with a specialty in swine nutrition. His experience growing up on an Iowa livestock farm helped generate his interest in a career in animal nutrition. Dr. Forsyth began his career at Purdue University after completing his Ph. D. degree in Nutrition at Cornell University, working on problems in mineral metabolism in swine. His research program at Purdue has included feedstuff utilization and interactions of iron supplementation with susceptibility to disease.

DR. DALE M FORSYTH

Professor/Instructor

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COURSE OUTLINE:

- › History of Nutrition; Composition of Plants (animal food) vs. Animals
- › Nutrient Classes
- › Water
- › Carbohydrates, (definitions, classifications, functions, deficiencies, etc.)
- › Fat, (definitions, classifications, functions, deficiencies, etc.)
- › Proteins, (definitions, classifications, functions, deficiencies, etc.)
- › Vitamins, GENERAL; Vitamins A, D, E, K (definitions, classifications, functions, deficiencies, etc.)
- › B-Vitamins, (definitions, classifications, functions, deficiencies, etc.)
- › Minerals
- › Macro Minerals
- › Trace Minerals
- › Ultra Trace Minerals
- › Non-nutritive feed additives, growth promotants
- › EXAM 1
- › Digestive anatomy and secretions, physiology; pigs, birds
- › Ruminant and Herbivore anatomy and function. Fermentation
- › Feedstuff analysis and evaluation.
- › Energetics. TDN, GE, DE, ME, Net E. Value of Protein (BV, NPU, N Dig., N Reten.)
- › Feed classification
- › Concentrates: cereal grains, by-product feeds
- › Concentrates: protein feeds, miscellaneous.
- › EXAM 2
- › Balancing rations: Principles, Non-ruminant applications. Method applied to some ruminant rations.
- › Forages: Grasses, Legumes, Residue feeds
- › Forage Intake and Factors affecting Dry Matter Intake (i.e., Feed Consumption)
- › Forages: harvest forms; pasture, hay, silage.
- › Ration balancing with Forages
- › Balancing rations with the aid of Computers
- › Feeding Swine and Poultry
- › Feeding Beef Cattle and Dairy Cattle
- › Feeding Sheep, Horses, and Dogs and Cats
- › Special things about the nutrition of other pets.
- › FINAL EXAM

RECOMMENDED READING

Basic Animal Nutrition and Feeding, W.G. Pond, D.C. Church, K.R. Pond and P.A. Schoknecht, Wiley, Fifth Edition, 2005. Previous editions may be used.

Principles of Companion Animal Nutrition, John P. McNamara, Pearson Prentice Hall, 2006.

PREREQUISITE(S)

Expected sophomore standing and exposure to freshman chemistry.

Principles of Animal Nutrition meets the background requirement for application to colleges of Veterinary Medicine requiring animal nutrition (please check your school of interest to confirm).