

899. **Research**
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

912. **Seminar**
Fall, Winter, Spring. 1 credit.

926. **Comparative Nutrition-Lipids and Carbohydrates**

Winter of odd-numbered years. 4(4-0) BCH 452 and a previous course on principles of nutrition. Interdepartmental with and administered by Human Nutrition and Foods. Regulatory aspects of carbohydrate and lipid metabolism as influenced by nutrition in mammals. Emphasis on normal and abnormal physiological states such as obesity, ketosis and diabetes.

927. **Comparative Nutrition-Protein Metabolism and Developmental Biology**

Winter of even-numbered years. 4(4-0) BCH 452, PSL 802 or concurrently. Interdepartmental with and administered by Human Nutrition and Foods.

Protein quality assessment, protein status, protein calorie malnutrition, amino acid metabolism, protein turnover, digestion and absorption, hormonal control of protein metabolism, developmental aspects of protein metabolism and growth.

928. **Comparative Nutrition-Minerals**

Spring of even-numbered years. 3 credits. BCH 452, PSL 802. Interdepartmental with Human Nutrition and Foods.

Forms and location in body, metabolic roles, deficiency and toxicity signs, interrelationships, requirements and biological availability of sources.

929. **Comparative Nutrition-Vitamins**

Spring of odd-numbered years. 3(3-0) BCH 452 and a previous course on principles of nutrition. Interdepartmental with Human Nutrition and Foods.

Chemical and physical properties, standards of activity, occurrence, metabolic roles, antivitamins, deficiency and toxicity signs, requirements and factors affecting requirements.

963. **Genetics of Breed Improvement**

Winter. 3(3-0) ANS 461, STT 421. Breed improvement. Changing gene frequency. Genetic and environmental subdivision of phenotypic variance.

964. **Breeding Systems and Plans**

Spring. 3(3-0) 963. Biometric relations between related animals. Role of selection in changing populations. The effects of different mating systems.

999. **Research**

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

ANIMAL SCIENCE ANS

College of Agriculture and Natural Resources

101. **Animal Science**

Fall. 5(4-2) Survey of the animal industries including history, economic geography, anatomy and physiology, nutrition and feed usage, and systems of commercial livestock and poultry production.

213. **Animal Science Seminar**

Fall. 1(2-0) Animal science industries. Industry representatives will be utilized to discuss particular areas.

325. **Principles of Animal Nutrition**
Spring. 5(5-0) CEM 132; BCH 200 recommended.

Livestock feeds and their nutrients. Functions of and requirements for nutrients. Evaluation of feeds. Feeding practices. Formulation of rations for beef and dairy cattle, horses, poultry, sheep and swine.

433. **Ruminant Nutrition**

(DRY 433.) 4(3-2) 325. Principles of ruminant nutrition and application to actual feeding practices in commercial dairy and beef operations. Rumen fermentation as related to feed utilization, growth, milk production and milk composition.

461. **Principles of Animal Breeding**

Winter. 3(3-0) CSS 250. Quantitative inheritance. Gene frequency. Statistical tools used in animal breeding. Effect of selection and mating systems on animal population.

525. **Animal Nutrition**

Winter. 5(4-2) BCH 401. Principles of nutrition. Nutrients and their metabolism. Nutritive requirements for maintenance, growth, reproduction, lactation and work. Nutrient sources and their use in preparing diets for domestic animals.

826. **Animal Nutrition**

Spring. 4(4-0) One course each: biochemistry, physiology; and approval of department. Nutrition basic to animal feeding. Application of chemistry and physiology to nutrition. Nutrient requirements for normal body functions. Techniques involved in nutrition research; readings in current literature.

854. **Design of Animal Experiments**

Spring. 4(4-0) STT 423. Choice, implementation and statistical analysis of experimental plans for research with animals. Designs for reduction of experimental error. Analysis of experiments with complex structure or unequal subclass numbers.

855. **Analysis of Nonorthogonal Research Data**

Spring. 4(4-0) STT 423. Applied analysis techniques of field or survey data with unbalanced subclass numbers in field of biological sciences; predictions utilizing several variables; estimation of effects of factors and their interactions.

965. **Biometrical Genetics**

Fall of odd-numbered years. 4(4-0) 855 and one course in quantitative genetics. Genetics models for quantitative traits: estimation of components of variance; correlation of relatives; Selection Index theory; multi-factor and multivariate responses in designed experiments.

ANTHROPOLOGY ANP

College of Human Medicine College of Osteopathic Medicine College of Social Science

100. **The Origin of Man and Culture**
Fall, Winter, Spring, Summer. 4(3-1)

Introduction to physical anthropology: the position of man in the animal kingdom, the genetic mechanisms of evolution, human beginnings and the fossil record, racial evolution and racial types among modern man, the anticipation of culture among other animals and the development of human culture, and culture as an adaptive mechanism.

171. **Introduction to Sociocultural Anthropology**

Fall, Winter, Spring, Summer. 4(3-1) Comparison of ways of life among primitive, peasant and civilized peoples. Implications of these styles of life for understanding of human behavior in general and exotic cultures in particular.

1DC. **Resource Ecology and Man**

For course description, see Interdisciplinary Courses.

1DC. **Introduction to Latin America I**

For course description, see Interdisciplinary Courses.

221. **Introduction to Social and Cultural Analysis**

Fall, Spring. 4(3-1) 171. Basic theoretical framework of socio-cultural analysis; structural functionalism, evolutionism, and cultural ecology.

250. **Culture, Environment and Adaptation**

Fall. 4(3-1) 100. Culture as an adaptive process—as developed in the million years of human history and still influencing environmental quality, population control, and allocation of resources in primitive and modern societies.

1DC. **Continuing Revolution in China: Problems and Approaches**

For course description, see Interdisciplinary Courses.

262. **Status of Women in Culture and Society: A Comparative View**

Winter. 3(3-0) 171 or approval of department. Comparative analysis of the status of women emphasizing non-Western cultures and societies. Economic and domestic division of labor between the sexes as a factor underlying division of status, power and authority.

263. **Origin of Civilization: Archaeology**

Spring. 4(4-0) 100. The rise, development and spread of culture in the period before written history. Archaeological evidence is used to trace the evolution of culture as it has been reconstructed from the excavation of pre-historic sites in the Old and New World.