Poultry Science (POSC)

Courses

POSC 1002. Introduction to Careers in Poultry Science (Fa). 2 Hours.
To introduce the student to the career opportunities in the poultry science industry. Corequisite: Lab component.

POSC 1012. Avian Biology (Sp). 2 Hours.
Students will be introduced to biological sciences associated with poultry. Topics will include avian origin, anatomy, physiology and behavior. Course will serve as foundation for poultry production courses. Lecture 2 hours.

POSC 1062. Sustainable Integrated Small Animal Farming (Sp). 2 Hours.
Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented.
This course is cross-listed with ANSC 1062.

POSC 1123. The Animals in our Lives (Su). 3 Hours.
Address the controversies and focus on animal welfare, environmental issues and sustainability.
This course is cross-listed with ANSC 1123.

POSC 2343. Poultry Production (Fa). 3 Hours.
To develop a basic foundation about the practices utilized to produce broilers and turkeys. Course will highlight hatchery function and management; embryo development and hatching; chick/poultry transportation, preparation and maintenance of facilities for rearing birds, bird environment, nutrition, and health. Also to be covered are the different roles associated with live production in an integrated company. Corequisite: Lab component.

POSC 2353. Poultry Breeder Management (Sp). 3 Hours.
Students will be introduced to the management practices used in production of young and adult chickens, turkeys, and other poultry with special emphasis on broiler, breeder, and market egg production. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Pre- or Corequisite: POSC 1012.

POSC 3013. Exotic Companion Birds (Odd years, Fa). 3 Hours.
Topics include basic care, health, breeding, bird evolution, anatomy, and nutritional management of commonly kept exotic companion birds, including parrots, cockatoos, macaws, finches, canaries, and pigeons. Discussion will include housing and care for individual pet birds and large scale breeding and production. Lecture/discussion 3 hours per week. Prerequisite: BIOL 1543.

POSC 3032. Animal Physiology I (Fa). 2 Hours.
Fundamental aspects of neural/muscle/bone tissues and the cardiovascular system. The normal structure and functions of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: BIOL 1543 and CHEM 1123 or CHEM 1073.
This course is cross-listed with ANSC 3032.

POSC 3042. Animal Physiology II (Sp). 2 Hours.
Fundamental aspects of renal, respiratory, digestive, and endocrine physiology will be covered. The normal structure and function of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: BIOL 1543 and CHEM 1123 or CHEM 1073.
This course is cross-listed with ANSC 3042.

POSC 3123. Principles of Genetics (Fa). 3 Hours.
Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher.
This course is cross-listed with ANSC 3123.

POSC 3223. Poultry Diseases (Fa). 3 Hours.
Common diseases affecting poultry reared under commercial conditions will be covered including diagnosis, therapy and prevention. Immunity, sanitation practices, and chemoprophylaxis will also be covered. Lecture 3 hours per week with some demonstrations, slides and videotapes. Prerequisite: BIOL 2013 and BIOL 2011L and junior standing.

POSC 3381. Poultry Judging and Selection (Sp, Fa). 1 Hour.
Practice in production judging and flock selection. Laboratory 3 hours per week. May be repeated for up to 4 hours of degree credit.

POSC 3513. Current Approaches in Agricultural Laboratory Research (Even years, Sp). 3 Hours.
A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543.
This course is cross-listed with POSC 3513H.

POSC 3513H. Current Approaches in Agricultural Laboratory Research (Even years, Sp). 3 Hours.
A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543.
This course is cross-listed with POSC 3513.

POSC 3544. Avian Anatomy (Sp). 4 Hours.
Detailed coverage of the external and internal anatomy of poultry, including formation and development of the egg and embryo. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543.

POSC 400V. Special Problems (Sp, Su, Fa). 1-9 Hour.
Special problems in the poultry sciences for advanced students. May be repeated for up to 9 hours of degree credit.

POSC 401V. Internship in Poultry Science (Sp, Su, Fa). 1-6 Hour.
Supervised work experience with private or government organizations to introduce students to professional areas of work in poultry science. Prerequisite: Junior standing. May be repeated for up to 8 hours of degree credit.

Analysis of processing data related to compliance with regulatory limits, quality & safety limits and internal & external customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Prerequisite: Instructor consent.

POSC 401V. Special Topics in Poultry Science (Irregular). 1-4 Hour.
Topics not covered in other courses or for a more intensive study of specific topics in poultry science. May be repeated for degree credit.

POSC 4023. Legal Issues in Animal Agriculture (Odd years, Sp). 3 Hours.
An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed.
This course is cross-listed with AGEC 4123, ANSC 4123.

POSC 4213. Integrated Poultry Management Systems (Fa). 3 Hours.
Major managerial systems in the integrated commercial poultry industry. Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Prerequisite: POSC 2353 and AGEC 1103 and AGEC 2303.
POSC 4233. Value Added Muscle Foods (Odd years, Sp). 3 Hours.
An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products. Prerequisite: POSC 4314.

POSC 4314. Egg and Meat Technology (Fa). 4 Hours.
Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1073 and CHEM 1071L) and BIOL 1543 and BIOL 1541L.

POSC 4333. Poultry Breeding (Odd years, Fa). 3 Hours.
Application of new developments in poultry breeding for efficient egg and meat production. Not intended for students interested in a career in veterinary sciences. Lecture 3 hours per week. Prerequisite: MATH 1203 or higher and junior standing.

POSC 4343. Poultry Nutrition (Sp). 3 Hours.
Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603 and junior standing.

POSC 4801. Seminar: Research Topics (Odd years, Sp). 1 Hour.
Required by all poultry science majors. Prerequisite: Junior or Senior standing and COMM 1313.

POSC 4811. Seminar: Professionalism (Odd years, Fa). 1 Hour.
Addressing issues associated with preparation for finding and retaining your first job in the poultry industry. Lecture 1 hour per week. Prerequisite: Junior or Senior standing.

POSC 4821. Seminar: Problem Solving (Even years, Sp). 1 Hour.
Real world problem solving of poultry production systems. Lecture 1 hour per week. Prerequisite: Junior or Senior standing.

POSC 4831. Seminar: Processing Regulations (Even years, Fa). 1 Hour.
Processing plant procedures and regulations with an emphasis on problem solving. Lecture 1 hour per week. Prerequisite: Junior or Senior standing.

POSC 4923. Brain and Behavior (Fa). 3 Hours.
Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3032 or POSC 3032) or (ANSC 3042 or POSC 3042), or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533.

This course is cross-listed with POSC 4923.

POSC 500V. Special Problems (Sp, Su, Fa). 1-6 Hour.
Work in special problems of poultry industry. Prerequisite: Graduate standing.

POSC 510V. Special Topics in Poultry Sciences (Irregular). 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in poultry science. Prerequisite: Graduate standing. May be repeated for degree credit.

POSC 5113. Food Toxicology and Contaminants (Irregular). 3 Hours.
During this course, the student will learn basic concepts of food toxicology, study the different physiological processes involved in food borne intoxications, and learn about potential health problems associated with exposure to these compounds. Prerequisite: Graduate study.

POSC 5123. Advanced Animal Genetics (Even years, Fa). 3 Hours.
Specialized study of animal genetics. Lecture 3 hours per week. Prerequisite: POSC 3123 or ANSC 3123.
This course is cross-listed with ANSC 5123.

POSC 5143. Biochemical Nutrition (Even years, Fa). 3 Hours.
Interrelationship of nutrition and physiological chemistry; structure and metabolism of physiological significant carbohydrates, lipids, and proteins; integration of metabolism with provision of tissue fuels; specie differences in regulatory control of tissue and whole body metabolism of nutrients. Prerequisite: CHEM 3813.
This course is cross-listed with ANSC 5143.

POSC 5152. Protein and Amino Acid Nutrition (Even years, Sp). 2 Hours.
Students will be introduced to the basic processes of protein digestion, amino acid absorption, transport, metabolism, and utilization along with how biochemical function of proteins and their dynamic state affect nutritional status for animals and man. Prerequisite: CHEM 3813.
This course is cross-listed with ANSC 5152.

POSC 5233. Value Added Muscle Foods (Even years, Sp). 3 Hours.
An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products.

POSC 5313. Domestic Animal Bacteriology (Fa). 3 Hours.
A study of bacteria pathogenic for domestic animals. Lecture 3 hours per week.

POSC 5334. Advanced Immunology (Sp). 3 Hours.
Aspects of innate, cell-mediated, and humoral immunity in mammalian and avian species. Molecular mechanisms underlying the function of the immune system are emphasized. A course in Basic Immunology prior to enrollment in Advanced Immunology is recommended but not required. Lecture 3 hours per week. This course is cross-listed with BIOL 5334.

POSC 5335L. Immunology in the Laboratory (Sp). 2 Hours.
Laboratory course on immune-diagnostic laboratory techniques and uses of antibodies as a research tool. Included are cell isolation and characterization procedures, immunochemistry, flow cytometry, ELISA and cell culture assay systems. Laboratory 6 hours per week. Prerequisite: POSC 5343 or BIOL 5343 or BIOL 4713.

This course is cross-listed with BIOL 5335L.

POSC 5342. Advanced Poultry Diseases (Odd years, Sp). 2 Hours.
An in-depth coverage of the most important diseases of poultry with a focus on understanding mechanisms of pathogenesis, diagnostic techniques and principles of prevention. Lecture/discussion 2 hours per week. Prerequisite: POSC 3223.

POSC 5343L. Advanced Analytical Methods in Animal Sciences Laboratory (Fa). 3 Hours.
Introduction into theory and application of current advanced analytical techniques used in animal research. Two 3-hour laboratory periods per week. This course is cross-listed with ANSC 5743L.

POSC 5347. Molecular Analysis of Foodborne Pathogens (Fa). 3 Hours.
Course topics will include molecular detection and identification of foodborne pathogens, the molecular response of foodborne pathogens to their environments, functional genomic approaches, and analysis of complex microbial communities. Lecture/discussion 3 hours per week.

POSC 5901. Graduate Seminar (Sp, Fa). 1 Hour.
Critical review of the current scientific literature pertaining to the field of poultry science. Oral reports. Recitation 1 hour per week. Prerequisite: Senior standing.
POSC 5923. Brain and Behavior (Fa). 3 Hours.
Covers cellular through neural systems, major brain functions and comparative
neuroanatomy. Topics include ion channels, membrane and action potentials,
synaptic integration, neurotransmitters, major brain regions of mammals and birds,
sensory and autonomic nervous systems, neuroendocrine system, and control by
the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite:
ANSC 3032 or POSC 3032 and ANSC 3042 or POSC 3042, or PSYC 2003, or
BIOL 2213, or BIOL 2443, or BIOL 2533.

POSC 5932. Cardiovascular Physiology of Domestic Animals (Fa). 2 Hours.
Cardiovascular physiology, including mechanisms of heart function and excitation,
and blood vessel mechanisms associated with the circulatory system in domestic
animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks
Prerequisite: ANSC 3032 or POSC 3032 and ANSC 3042 or POSC 3042.
This course is cross-listed with ANSC 5932.

POSC 5942. Endocrine Physiology of Domestic Animals (Fa). 2 Hours.
Endocrine physiology, including mechanisms of hormone secretion, function, and
regulation. Mechanisms associated with the endocrine system will be discussed for
domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8
weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component.
Prerequisite: ANSC 3032 or POSC 3032 and ANSC 3052 or POSC 3042.
This course is cross-listed with ANSC 5942.

POSC 5952. Respiratory Physiology of Domestic Animals (Sp). 2 Hours.
Respiratory physiology, including mechanisms of lung function and gas exchange.
Mechanisms associated with the interaction of the respiratory system with other
bodily systems in domestic animals and poultry will be discussed. Lecture 3
hours; drill 1 hour per week for first 8 weeks of semester. Pre- or Corequisite:
CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC 3032 or POSC 3032
and ANSC 3042 or POSC 3042.
This course is cross-listed with ANSC 5952.

POSC 5962. Gastrointestinal/Digestive Physiology of Domestic Animals (Fa). 2
Hours.
Gastrointestinal and hepatic physiology, including mechanisms of digestion,
absorption of nutrients with emphasis on cellular control mechanisms in domestic
animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks
Prerequisite: ANSC 3032 or POSC 3032 and ANSC 3042 or POSC 3042.
This course is cross-listed with ANSC 5962.

POSC 5972. Renal Physiology of Domestic Animals (Sp). 2 Hours.
Renal physiology, including mechanisms of renal clearance with emphasis on
cellular control mechanisms in domestic animals and poultry. Lecture 3 hours;
drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite:
CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC 3032 or POSC 3032
and ANSC 3042 or POSC 3042.
This course is cross-listed with ANSC 5972.

POSC 600V. Thesis (Sp, Su, Fa). 1-6 Hour.
Thesis. Prerequisite: Graduate standing. May be repeated for degree credit.

POSC 6123. Advanced Food Animal Wellbeing (Sp). 3 Hours.
Advances in fundamentals of animal welfare including animal health, animal
handling, food safety and productivity. Prerequisite: ANSC 2213 or BIOL 4833 or
instructor consent.
This course is cross-listed with ANSC 6123.

POSC 6343. Vitamin Nutrition in Domestic Animals (Even years, Sp). 3 Hours.
The vitamins required by domestic animals with emphasis upon their role in
animal nutrition, physiological functions, and consequences of failure to meet the
requirement of the animal. Lecture 3 hours per week. Prerequisite: (ANSC 3143 or
POSC 4343) and CHEM 3813.
This course is cross-listed with ANSC 6343.

POSC 700V. Doctoral Dissertation (Sp, Su, Fa). 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. May be repeated for degree
credit.