

# Poultry Science (PO)

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## **PO 150 Poultry Management** (3 credit hours)

Principles and practices of commercial market turkey, broiler, and roaster management. Includes breeding, nutrition, housing, related production parameters, and an examination of contracts and grower-company relationships.

Requisite: Agricultural Institute Only

*Typically offered in Spring only*

## **PO 162/VMP 162 Livestock and Poultry Disease Management** (3 credit hours)

Basic principles of disease and disease management in livestock and poultry. Disease prevention through sanitation and vaccination. Diseases of horses, pigs, ruminants, poultry, and disease prevention programs for each species

Requisite: Agricultural Institute Only

*Typically offered in Spring only*

## **PO 201/PO 201A Poultry Science and Production** (3 credit hours)

Fundamental principles of broiler, turkey and egg production including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing.

Co-requisite: PO 202

*GEP Natural Sciences*

*Typically offered in Fall and Spring*

## **PO 201A/PO 201 Poultry Science and Production** (3 credit hours)

Fundamental principles of broiler, turkey and egg production including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing.

Co-requisite: PO 202

*GEP Natural Sciences*

*Typically offered in Fall and Spring*

## **PO 202/PO 202A Poultry Science and Production Laboratory** (1 credit hours)

This laboratory course will cover the fundamental principles of broiler, turkey and egg production including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing. This course includes field trips for which transportation will be provided.

Corequisite: PO 201

*GEP Natural Sciences*

*Typically offered in Fall and Spring*

## **PO 202A/PO 202 Poultry Science and Production Laboratory** (1 credit hours)

This laboratory course will cover the fundamental principles of broiler, turkey and egg production including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing. This course includes field trips for which transportation will be provided.

Corequisite: PO 201

*GEP Natural Sciences*

*Typically offered in Fall and Spring*

## **PO 212 Poultry and People: Why did the chicken cross the world?** (3 credit hours)

Poultry species play a vital role in modern society. This course engages students to develop research skills including information literacy, data collection, and developing arguments based on evidence. Specific course topics are developed by students during each course offering. General course content will include, but is not limited by the following topics: History of Domestication, Religious Symbolism, Social and Culinary Practice, and Modern Poultry Production (post-1950) commercial and hobby. Delivery of this course will be inquiry based and focus on utilizing research techniques to gather information, develop a hypothesis, collect information, interpret the results, and report findings in multiple formats.

*GEP Interdisciplinary Perspectives*

*Typically offered in Fall only*

## **PO 215 Applied Avian and Aquaculture Nutrition** (3 credit hours)

Comparison of poultry and aquaculture digestive systems, nutrient requirements, formulation and nutritional management, influence of growth and production curves, consumption patterns, and feeding management in commercial poultry and aquaculture industries. Feed manufacturing and government regulations.

Prerequisite: CH 101 and CH 102

*Typically offered in Spring only*

## **PO 290 Exploring Opportunities in Poultry Science** (2 credit hours)

Exploration of topics related with current and future potential to influence the poultry industry. Guest lectures from industry representatives will include: vertically integrated poultry production, primary breeders, marketing, animal health, veterinary medicine as it relates to poultry, allied equipment manufacturers, and management of poultry companies. Special emphasis on summer internships and career services.

*Typically offered in Fall only*

## **PO 322/ANS 322/FS 322 Muscle Foods and Eggs** (3 credit hours)

Processing and preserving fresh poultry, red meats, seafood, and eggs. Ante- and post-mortem events as they affect quality, yield, and compositional characteristics of muscle foods. Principles and procedures involved in the production of processed meat items.

Prerequisite: ZO 160, BIO 181 or BIO 183

*Typically offered in Fall only*

## **PO 340 Live Poultry and Poultry Product Evaluation, Grading, and Inspection** (3 credit hours)

To provide students with experience handling live poultry as well as working with an learning about USDA grades and evaluation of poultry meat, meat products, and eggs. Develop an understanding of product specifications.

Prerequisite: PO 201

*Typically offered in Fall only*

## **PO 401 Poultry Diseases** (4 credit hours)

Concepts of factors contributing to or causing disease, disease cycle, host responses, and general approaches to prevention and control including management and biosecurity methods, immunization, and medication. Recognition, diagnosis, prevention, control, and treatment of economically significant infectious and noninfectious diseases affecting poultry.

Prerequisites: PO 201 and PO 202

*Typically offered in Spring only*

**PO 404/PO 504 Avian Anatomy and Physiology** (4 credit hours)  
Principles of avian physiology integrating physiological functions and anatomical structures of organs and organ systems. Practical problems associated with poultry production. The importance of maximizing growth and productivity via exploitation of environmental influences on physiological systems. Credit not given for PO 404 and 504.

Prerequisite: PO 201

*Typically offered in Fall only*

**PO 406/PO 506 Physiological Aspects of Poultry Management** (3 credit hours)

Application of physiological principles to modern poultry management and research. Poultry physiology will be related to practical and research management topics including nutrition, housing, ventilation, disease, heat stress, and lighting programs. Students cannot receive credit for both PO 406 and PO 506.

Prerequisite: PO 201, Corequisite: PO 407

*Typically offered in Fall only*

**PO 407 Physiological Aspects of Poultry Management Laboratory** (1 credit hours)

Practical experience with poultry husbandry, animal environment management, and feeding in a research environment. Laboratory exercises include feeding and nutrition programs, weighing birds, lighting management and infrastructure, biosecurity and sanitation, vaccinations, hatching egg management, brooding, ventilation programs and infrastructure, housing design and infrastructure, SOP development, human safety and health training, and animal care training. Laboratory exercises will prepare students for both commercial poultry industry and animal research management careers. Co-requisite with PO 406. Personal transportation to Chicken Educational Unit required.

Prerequisite: PO 201, Corequisite: PO 406

*Typically offered in Fall only*

**PO 410 Production and Management of Game Birds in Confinement** (3 credit hours)

Management principles associated with the successful propagation and rearing of game birds, ornamental birds and waterfowl in confinement. Housing and pen requirements, nutrition, disease control and regulatory issues included.

**PO 411 Agrosecurity** (3 credit hours)

This course is designed to increase the awareness of the issues and vulnerabilities of the US agricultural system, the importance of agriculture in the US economy, and the importance of protecting it from disease and/or attack. This course is organized to integrate and assimilate knowledge across multiple disciplines including agriculture, animal health, human health, infectious diseases, business, economics, and public policy. Students will identify and analyze the interactions between these disciplines in light of increasing population and concentrated agriculture's increased vulnerability to major disruptions in food production. Students will also analyze where potential links in the food chain are susceptible to disruptions by individuals (or natural disasters), the consequences of these disruptions, and how to minimize the associated risks by developing case studies and strategies for defending against specific threats. Students must have junior standing.

Junior standing or above

*GEP Interdisciplinary Perspectives*

*Typically offered in Spring only*

*This course is offered alternate even years*

**PO 412 Emerging Topics in Poultry Science** (3 credit hours)

This course is designed to allow students to merge science taught in previous Poultry Science courses with topics considered of interest or emerging in the poultry industry. Students will utilize science and critical thinking skills to solve real world scenarios. This course is designed for students that have completed PO 201 and PO 202. Junior or Senior standing.

*Typically offered in Spring only*

**PO 415/PO 515/NTR 515/ANS 515/ANS 415/NTR 415 Comparative Nutrition** (3 credit hours)

Principles of nutrition, including the classification of nutrients and the nutrient requirements of and metabolism by different species for health, growth, maintenance and productive functions.

Prerequisite: ANS 225 or ANS 230 or CH 220 or CH 223 or CH 227

*Typically offered in Fall, Spring, and Summer*

**PO 421 Commercial Egg Production** (3 credit hours)

Principles and current practices of commercial egg production. The Commercial Egg Industry as it is currently evolving and operating in the US. We will examine the development of the industry as it has progressed through integration, consolidation, and expansion. We will also look at the outside influences on the industry such as federal government, European Economic Community (EEC) perspective, animal welfare and consumer desire for naturally raised poultry and poultry products.

Prerequisite: PO 201

*Typically offered in Spring only*

**PO 424 Poultry Meat Production** (3 credit hours)

Principles and current practices of vertically integrated broiler and turkey production; encompassing management, nutrition, poultry health, environmental, and related areas.

Prerequisite: PO 201

*Typically offered in Spring only*

**PO 425/NTR 525/FM 525/ANS 525/PO 525/NTR 425/ANS 425/ FM 425 Feed Manufacturing Technology** (3 credit hours)

Feed mill management, feed ingredient purchasing, inventory, storage, and quality evaluation, computerized feed formulation, feeding programs for poultry and swine, feed mill design, equipment, maintenance, operation, safety, state and federal regulations pertaining to feed manufacture.

Prerequisite: ANS(NTR,PO) 415 or ANS 230 or ANS 225

*Typically offered in Fall and Spring*

**PO 426/FM 426 Feed Manufacturing Technology Laboratory** (1 credit hours)

Laboratory associated with feed mill management, feed ingredient purchasing, inventory, storage, and quality evaluation, computerized feed formulation, feeding programs for poultry and swine, feed mill design, equipment, maintenance, operation, safety, state and federal regulations pertaining to feed manufacture. PO/ANS/FM 425 is a required course for the Poultry Science Technology Concentration (TPS); the Feed Milling Minor (FEM); and the Feed Mill Certificate.

Corequisite: PO 425 or ANS 425 or FM 425 and FEM minor or

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*Typically offered in Spring only*

**PO 433/PO 533 Poultry Processing and Products** (3 credit hours)

Poultry processing, further processing, and resulting products as affected by basic muscle composition and function during the conversation of muscle to meat. Microbiology of spoilage and pathogenic organisms, and the regulatory and HACCP programs designed to minimize problems. Overall business functions of poultry processing to understand profit/loss factors, and skills necessary for communication and management. Various sections on sanitary design/construction, pest control, wastewater treatment, and further processed egg products. Credit for both PO 533 and PO 433 is not allowed. Transportation to field trips will be provided. Non-scheduled class time for field trips or out-of-class activities may be required for this class. Transportation to scheduled labs at Lake Wheeler CEU/Poultry Processing Lab will be provided by students.

Prerequisite: PO 201

*Typically offered in Fall only*

**PO 435 Poultry Incubation & Breeding** (4 credit hours)

Principles and current practices of modern poultry incubation and breeding production systems. Students will be able to describe basic elements of breeding management and production practices, to apply those elements to specific scenarios, and to strengthen their ability to interpret and make critical judgements relative to the breeding of poultry, production of hatching eggs, and the subsequent incubation and hatching process.

Prerequisite: PO 201

*Typically offered in Spring only*

**PO 492 External Learning Experience** (1-6 credit hours)

A learning experience in agriculture and life sciences within an academic framework that utilizes facilities and resources which are external to the campus. Contact and arrangements with prospective employers must be initiated by student and approved by a faculty adviser, the prospective employer, the departmental teaching coordinator and the academic dean prior to the experience.

Prerequisite: Sophomore standing

*Typically offered in Fall, Spring, and Summer*

**PO 493 Special Problems in Poultry Science** (1-6 credit hours)

A learning experience in agriculture and life sciences within an academic framework that utilizes campus facilities and resources. Contact and arrangements with prospective employers must be initiated by student and approved by a faculty adviser, the prospective employer, the departmental teaching coordinator and the academic dean prior to the experience.

Prerequisite: Sophomore standing

*Typically offered in Fall, Spring, and Summer*

**PO 495 Special Topics in Poultry Science** (1-3 credit hours)

Offered as needed to present materials not normally available in regular course offerings or for offering of new courses on a trial basis.

*Typically offered in Fall, Spring, and Summer*

**PO 504/PO 404 Avian Anatomy and Physiology** (4 credit hours)

Principles of avian physiology integrating physiological functions and anatomical structures of organs and organ systems. Practical problems associated with poultry production. The importance of maximizing growth and productivity via exploitation of environmental influences on physiological systems. Credit not given for PO 404 and 504.

Prerequisite: PO 201

*Typically offered in Fall only*

**PO 506/PO 406 Physiological Aspects of Poultry Management** (3 credit hours)

Application of physiological principles to modern poultry management and research. Poultry physiology will be related to practical and research management topics including nutrition, housing, ventilation, disease, heat stress, and lighting programs. Students cannot receive credit for both PO 406 and PO 506.

Prerequisite: PO 201, Corequisite: PO 407

*Typically offered in Fall only*

**PO 510 Poultry Product Safety** (3 credit hours)

This course comprehensively examines food safety in poultry and egg products, from production to consumption. Students will explore the microbial, chemical, and physical hazards associated with poultry and egg products, regulatory requirements, and industry best practices for ensuring food safety throughout the supply chain. The course will cover topics such as pathogen identification, HACCP principles, regulatory compliance, and emerging issues in food safety.

*Typically offered in Spring only*

**PO 515/NTR 515/ANS 515/ANS 415/NTR 415/PO 415 Comparative Nutrition** (3 credit hours)

Principles of nutrition, including the classification of nutrients and the nutrient requirements of and metabolism by different species for health, growth, maintenance and productive functions.

Prerequisite: ANS 225 or ANS 230 or CH 220 or CH 223 or CH 227

*Typically offered in Fall, Spring, and Summer*

**PO 521 Advanced Commercial Egg Production** (3 credit hours)

Provides students a deeper insight into the management of Commercial Egg Layer Complexes used in the industry as it is currently evolving and operating in the US. Students will examine the development of the organic, natural and carbon neutral developing for industry as it has progressed through integration, consolidation, and expansion. Students will consider the outside influences on the industry such as federal government, EEC perspective, animal welfare and consumer desire for naturally raised poultry and poultry products.

Prerequisite: Graduate Standing

*Typically offered in Spring only*

**PO 524/PHY 524 Comparative Endocrinology** (3 credit hours)

Basic concepts of endocrinology, including functions of major endocrine glands involved in processes of growth, metabolism and reproduction.

*Typically offered in Spring only*

**PO 525/NTR 425/ANS 425/FM 425/PO 425/NTR 525/FM 525/ANS 525 Feed Manufacturing Technology** (3 credit hours)

Feed mill management, feed ingredient purchasing, inventory, storage, and quality evaluation, computerized feed formulation, feeding programs for poultry and swine, feed mill design, equipment, maintenance, operation, safety, state and federal regulations pertaining to feed manufacture.

Prerequisite: ANS(NTR,PO) 415 or ANS 230 or ANS 225  
*Typically offered in Fall, Spring, and Summer*

**PO 533/PO 433 Poultry Processing and Products** (3 credit hours)

Poultry processing, further processing, and resulting products as affected by basic muscle composition and function during the conversion of muscle to meat. Microbiology of spoilage and pathogenic organisms, and the regulatory and HACCP programs designed to minimize problems. Overall business functions of poultry processing to understand profit/loss factors, and skills necessary for communication and management. Various sections on sanitary design/construction, pest control, wastewater treatment, and further processed egg products. Credit for both PO 533 and PO 433 is not allowed. Transportation to field trips will be provided. Non-scheduled class time for field trips or out-of-class activities may be required for this class. Transportation to scheduled labs at Lake Wheeler CEU/Poultry Processing Lab will be provided by students.

Prerequisite: PO 201  
*Typically offered in Fall only*

**PO 580/FM 580 Feed and Ingredient Quality Assurance** (3 credit hours)

The course will teach students the principles of feed and ingredient quality assurance and how to develop a comprehensive quality assurance program. The course will include the development of an approved supplier list, ingredient specifications, feed manufacturing quality assurance procedures, and risk based feed safety programs.

Prerequisite: NTR(FM) 525  
*Typically offered in Fall only*

**PO 590 Special Problems in Poultry Science** (1-6 credit hours)

*Typically offered in Fall, Spring, and Summer*

**PO 601 Seminar** (1 credit hours)

Preparation for research, research perspectives, rising concerns in poultry production, orientation for graduate studies in poultry science. Required of all graduate students in the Department of Poultry Science.

*Typically offered in Spring only*

**PO 620 Special Problems** (1-6 credit hours)

Specific problems of study assigned in various phases of poultry science.

Prerequisite: Graduate standing  
*Typically offered in Fall, Spring, and Summer*

**PO 685 Master's Supervised Teaching** (1-3 credit hours)

Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment, and evaluate the student upon completion of the assignment.

Prerequisite: Master's student  
*Typically offered in Fall, Spring, and Summer*

**PO 688 Non-Thesis Masters Continuous Registration - Half Time Registration** (1 credit hours)

For students in non-thesis master's programs who have completed all credit hour requirements for their degree but need to maintain half-time continuous registration to complete incomplete grades, projects, final master's exam, etc.

Prerequisite: Master's student  
*Typically offered in Spring only*

**PO 689 Non-Thesis Master Continuous Registration - Full Time Registration** (3 credit hours)

For students in non-thesis master's programs who have completed all credit hour requirements for their degree but need to maintain full-time continuous registration to complete incomplete grades, projects, final master's exam, etc. Students may register for this course a maximum of one semester.

Prerequisite: Master's student  
*Typically offered in Spring only*

**PO 690 Master's Examination** (1-9 credit hours)

For students in non thesis master's programs who have completed all other requirements of the degree except preparing for and taking the final master's exam.

Prerequisite: Master's student  
*Typically offered in Spring and Summer*

**PO 693 Master's Supervised Research** (1-9 credit hours)

Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Master's student  
*Typically offered in Fall and Spring*

**PO 695 Master's Thesis Research** (1-9 credit hours)

Thesis Research

Prerequisite: Master's student  
*Typically offered in Fall, Spring, and Summer*

**PO 696 Summer Thesis Research** (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Master's student  
*Typically offered in Summer only*

**PO 699 Master's Thesis Preparation** (1-9 credit hours)

For students who have completed all credit hour requirements and full-time enrollment for the master's degree and are writing and defending their thesis.

Prerequisite: Master's student  
*Typically offered in Fall, Spring, and Summer*

**PO 757/IMM 757 Comparative Immunology** (3 credit hours)

Compare and contrast the immune system structure and function of animal species of agricultural and veterinary significance with that of humans and traditional biomedical model organisms. Discuss key evolutionary differences, how different species use different mechanisms to achieve the same outcomes, and the clinical implications for these differences.

Prerequisite: MB 751 or MB 441 or BIO 414

*Typically offered in Spring only*

*This course is offered alternate odd years*

**PO 775/NTR 775 Mineral Metabolism** (3 credit hours)

Requirements, function, distribution, absorption, excretion and toxicity of minerals in humans and domestic animals. Interactions between minerals and other factors affecting mineral metabolism or availability. Emphasis on mechanisms associated with mineral functions and the metabolic bases for the development of signs of deficiency.

Prerequisite: ANS(NTR,PO) 415, BCH 451 and ZO 421

*Typically offered in Fall only*

**PO 801 Graduate Seminar In Poultry Science** (1 credit hours)

Preparation for research, research perspectives, rising concerns in poultry production, orientation for graduate studies in poultry science. Required of all graduate students in the Department of Poultry Science.

*Typically offered in Spring only*

**PO 820 Special Problems In Poultry Science** (1-6 credit hours)

Specific problems of study assigned in various phases of poultry science.

Prerequisite: Graduate standing

*Typically offered in Fall, Spring, and Summer*

**PO 885 Doctoral Supervised Teaching** (1-3 credit hours)

Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment and evaluate the student upon completion of the assignment.

Prerequisite: Doctoral student

*Typically offered in Fall and Spring*

**PO 890 Doctoral Preliminary Examination** (1-9 credit hours)

For students who are preparing for and taking written and/or oral preliminary exams.

Prerequisite: Doctoral student

*Typically offered in Spring only*

**PO 893 Doctoral Supervised Research** (1-9 credit hours)

Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Doctoral student

*Typically offered in Spring only*

**PO 895 Doctoral Dissertation Research** (1-9 credit hours)

Dissertation Research

Prerequisite: Doctoral student

*Typically offered in Fall, Spring, and Summer*

**PO 896 Summer Dissertation Research** (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Doctoral student

*Typically offered in Summer only*

**PO 899 Doctoral Dissertation Preparation** (1-9 credit hours)

For students who have completed all credit hour requirements, full-time enrollment, preliminary examination, and residency requirements for the doctoral degree, and are writing and defending their dissertations.

Prerequisite: Doctoral student

*Typically offered in Fall, Spring, and Summer*