AGRICULTURE (AGR)

AGR 105. Introductory Topics in Agriculture. (3 Credits)
I, II. A non-structured course for incoming students who have met the secondary skills standard examination requirements in the area of agriculture. Departmental chair approval required prior to enrollment. May be taken to a maximum of 6 hours.

View Course Learning Outcomes

1. {}

AGR 111. Introduction to American Agriculture. (3 Credits)
A. An overview of the agriculture industry in the United States including significant past events, current status and trends. Complexities of laws and regulations and their influence on the producer and consumer.

View Course Learning Outcomes

1. {}

AGR 115. Operation of Agricultural Equipment. (2 Credits)
(2) I. Lecture, laboratory and field experiences related to agricultural power equipment, and their safe operation, including hydraulics, electricty, chemical, and processing & handleing facilities. 1 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 125. Principles of Animal Science. (3 Credits)
I. Corequisite: AGR 126. Management and production of livestock enterprises; types, market classes, and grades of beef cattle, sheep and swine, and the breeds and products of dairy cattle.

View Course Learning Outcomes

1. {}

AGR 126. Animal Science Laboratory. (1 Credit)
I. Corequisite: AGR 125. Applied principles in the proper handling, restraint, and management techniques in beef, dairy, sheep, swine, and horses.

View Course Learning Outcomes

1. {}

AGR 130. Plant Science. (3 Credits)
I. Corequisite: AGR 131. Principles of plant growth, reproduction, and plant-soil relationships. Provides foundations of information for further study in agricultural and horticultural crop production and soil management. Credit will not be awarded to students who have credit for OHO 131.

View Course Learning Outcomes

1. {}

AGR 131. Plant Science Laboratory. (1 Credit)
I. Corequisite: AGR 130. Laboratory and field experiences related to plant growth, development, and management of crops. Credit will not be awarded to students who have credit for OHO 132 .

View Course Learning Outcomes

1. {}

AGR 170. Appl Unmanned Aerial Sys Agri. (3 Credits)
I. Introduction to the application of UAS/drones in agriculture. Typical applications and an overview of foundational skills needed to safely operate UAS systems in the U.S. airspace.2 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 213. Principles of Agricultural Mechanics and Energy Systems. (3 Credits)
I, II. Principles of operation, maintenance, and repair of electrical motors; basic electrical circuits, electrical power generation and electrical controls for agricultural mechanization systems and power requirements for agricultural structures; theoretical and practical experience.

View Course Learning Outcomes

1. {}

AGR 215. Principles of Soils. (3 Credits)
I, II. Corequisite: AGR216. Soil origin, classification and properties, soil conservation, soil microorganisms, organic matter, soil water, soil minerals, lime and commercial fertilizers, soil erosion, soil management.

View Course Learning Outcomes

1. {}

AGR 216. Principles of Soils Laboratory. (1 Credit)
(1) I,II. Corequisite: AGR 215. Laboratory and fiels experiences related to soils, and their properties, including soil sampling, fertility, pH, liming, water and texture. 2 Lab

View Course Learning Outcomes

1. {}

AGR 225. Evaluation and Selection of Livestock. (3 Credits)
II. An evaluation of dairy cattle, beef cattle, swine and sheep; use of records, body type ratings, and carcass information as they relate to functional anatomy and efficiency of production; sire selection and pedigree interpretation. 2 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 250. Introduction to Horses. (3 Credits)
A. History and role of horses and the equine industry, breeds of horses and ponies for work and pleasure, includes terminology, management and responsibilities, breeding, pests, current issues and care of horses.

View Course Learning Outcomes

1. {}

AGR 255. Companion Animal Management. (3 Credits)
A. Care and management of dogs, cats, rabbits, birds, reptiles and tropical fish. Companion animal breeds, behavior, nutrition, genetics and reproduction will be emphasized.

View Course Learning Outcomes

1. {}

AGR 300. Travel Study in Agriculture Technology. (1-6 Credits)
A. A travel course for groups and individuals in agriculture and horticulture to study new and emerging technologies in agriculture and horticulture, structural organizations of agricultural enterprises, and professional and interpersonal relationships. May be retaken once.

View Course Learning Outcomes

1. {}

AGR 301. Directed Work Experience. (1-4 Credits)
I, II. Agriculture majors only; minimum sophomore standing or departmental approval. A minimum of three hours per week per hour of credit using university or other approved facilities. May be retaken for a maximum of 4 credit hours.

View Course Learning Outcomes

1. {}

AGR 302. Directed Work Experience- Management Practicum. (3 Credits)
I, II. Student will schedule nine hours of work per week during the semester on a university farm to practice management and production skills related to a livestock herd or machinery operations. Options may be taken to a maximum of 12 hours. AGR 302A Agricultural Mechanization Option. AGR 302B Beef Cattle Option. AGR 302C Swine Option. AGR 302D Dairy Cattle Option. AGR 302E Crops Option. AGR 302F Sheep Option. AGR 304 Pest Management. (4) II. Identification of the principal agriculture and horticulture insect disease and weed pests in Kentucky. Control measures are identified with special emphasis on the safe use of chemicals and equipment calibration.

View Course Learning Outcomes

1. {}

AGR 302A. Agricultural Mechanization Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 302B. Beef Cattle Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 302C. Swine Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 302D. Dairy Cattle Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 302E. Crops Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 302F. Sheep Option. (3 Credits)

View Course Learning Outcomes

1. {}

AGR 304. Pest Management. (4 Credits)
Identification of the principal agriculture and horiculture insect disease and weed pests in Kentucky. Control measures are identified with special emphasis on the safe use of chemicals and equipment calibration. Credit will not be awarded for both AGR 304 and OHO 304. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 305. Professional Skills Seminar. (1 Credit)
A. Prerequisite: completion of 30 hours in the Associate or more than 60 hours and less than 90 hours in the Bachelor Degree Program. Course prepares students for the job market including; resume development, cover letter preparation, job interview skills and oral presentations.

View Course Learning Outcomes

1. {}

AGR 308. Agricultural Economics. (3 Credits)
I, II. Prerequisite: ECO 120. An introduction to the economic environment of the agribusiness sector. Examines the role of agriculture in the U.S. and world economies. Includes concepts and principles concerning individual agribusiness decision making.

View Course Learning Outcomes

1. {}

AGR 310. Principles of Agribusiness Management. (3 Credits)
II. Prerequisite: AGR 308. Organization and operation of the farm related agricultural business with emphasis on budgeting, enterprise selection, financial statements, and resource management. Includes microcomputer applications and survey of government regulations that are applicable to topic.

View Course Learning Outcomes

1. {}

AGR 311. Agriculture Metal Fabrication. (2 Credits)
A. Principles and techniques of arc and oxyacetylene welding and soldering as it pertains to fabrication and repair of agriculture machinery and equipment. 1 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 312. Ecology and Management of Grasslands and Pastures. (4 Credits)
II. Prerequisites: AGR 130 and 131, and Junior standing. Examination of grasslands and pastures from an ecological perspective with an emphasis on wildlife and livestock management. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 318. Soil/Water Conservation Technology. (3 Credits)
A, I. Principles and procedures for basic surveying and soil-water conservation systems. This will include how rainfall, run-off, erosion, contours, ponds, lagoons, drainage, and irrigation interact with the desired conservation system. 2 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 319. Renewable and Sustainable Energy Systems. (3 Credits)
(3) II. Crosslisted as ENV 319. Prerequisite: ENG 102 or ENG 105 (B) or HON 102; and MAT 105 or higher. Principles of energy and how those needs can potentially be met in the future will be discussed. Comparisons of existing energy sources (fossil fuels, nuclear power) with renewable sources (biomass, solar, and tidal). Credit will not be awarded for both AGR 319 and ENV 319.

View Course Learning Outcomes

1. {}

AGR 321. Feeds and Feeding. (4 Credits)
I. Feeds used in livestock feeding; including harvesting, storage, feeding characteristics, and ration formulation from these feedstuffs. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 326. Light Horse Production and Management. (4 Credits)
A. Prerequisite: AGR 125 and 126, AGR 250, or Departmental Approval. Size and scope of horse industry, conformation and selection of horses, basics of equine nutrition and reproduction. Signs of health and illness. Routine health care procedures. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 327. Beef Production. (4 Credits)
I. Prerequisites: AGR 125 and 126. History, importance, and trends associated with the beef cattle industry; systems of selecting, breeding, feeding, marketing, and management of beef cattle. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 328. Swine Production. (4 Credits)
A. Prerequisites: AGR 125 and 126. History, importance, and trends associated with the swine industry; systems of selecting, breeding, feeding, marketing, and management of swine. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 329. Small Ruminant Production. (4 Credits)
(4). A. Prerequisite: AGR 125 and 126. An overview of the small ruminant industry. Topics include: selection, breeding, reproduction, health, nutrition, management, and marketing of small ruminant and their products. 3 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 330. Animal Products. (3 Credits)
A. Prerequisites: AGR 125 and 126. Principles of grading, cutting, identifying, pricing, and consumer evaluation of poultry, beef, pork, and lamb cuts, and related products. 2 LEC/2Lab

View Course Learning Outcomes

1. {}

AGR 332. Poultry Production and Management. (3 Credits)
A. Prerequisites: AGR 125 & 126. An overview of the poultry industry focused on industry trends, breeds, management, environmental impacts, bird welfare, food safety, and product quality. Students will acquire practical experience in poultry production and product evaluation. 2 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 340. Conservation of Agricultural Resources. (3 Credits)
(3) A. Crosslisted as ENV 341. Prerequisite: any ENV or OHO course. Conservation of soils and their fertility, erosion and control, soil conservation methods for individual farms, water supply and distribution, problems of water and air pollution, problems resulting from the population explosion. Credit will not be awarded for both AGR 340 and ENV 341.

View Course Learning Outcomes

1. {}

AGR 345. Sustainable Agroecosystems. (3 Credits)
A, I. Prerequisites: any course in chemistry, AGR 130, and 131; or OHO 131 and 132 or BIO 131. A comprehensive study of new technology related to crop, and pest management practices which could enhance economic returns, environmental quality, and the resource base for the short and long term.

View Course Learning Outcomes

1. {}

AGR 349. Applied Learning in Agriculture. (0.5-8 Credits)
A. Work under faculty and field supervisors in placements related to academic studies. One to eight hours credit per semester or summer. Total hours: eight, associate; sixteen, baccalaureate. A minimum of 80 hours work required for each academic credit.

View Course Learning Outcomes

1. {}

AGR 350. Agricultural Marketing. (3 Credits)
A. A study of concepts, principles and practices of marketing as related to the agribusiness system. Emphasis on agricultural input, production and processing/manufacturing sectors. Includes agriculture futures commodity market theory, mechanics and practical applications.

View Course Learning Outcomes

1. {}

AGR 362. Hydraulic Systems. (2 Credits)
A. A study of basic principles of hydraulic systems and their application to agricultural and turf equipment. Lab experiences will provide familiarity and practice with equipment. 1 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 372. Topics and Laboratories in Animal Sciences. (2-6 Credits)
A. May be taken to a maximum of six hours, provided the topics are different. Lec/Lab hours will vary depending on topic.

View Course Learning Outcomes

1. {}

AGR 373. Animal Diseases. (4 Credits)
I. Prerequisite: six hours of animal science. Lecture topics include common diseases infecting domestic animals focusing on their treatment, prevention, and eradication. Laboratory content will focus on basic lab techniques and diagnostic methods. Prior completion of AGR 376 is recommended. 3 lec/2 lab

View Course Learning Outcomes

1. {}

AGR 374. Genetics of Livestock Improvement. (3 Credits)
II. Prerequisite: AGR 125 and AGR 126. An introduction to Mendelian, molecular, quantitative, and population genetics. Applied genetic principles of improving farm animals including crossbreeding, inbreeding, and other mating plans. Study and practice modern genetic laboratory techniques. 2 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 375. Reproduction and Artificial Insemination of Domestic Animals. (4 Credits)
A. Prerequisite: AGR 125 and AGR 126. The study of anatomical structures and physiological processes that control reproduction across species. This will include reproductive system development, spermatogenesis, female cycles, reproductive behavior, fertility, pregnancy, parturition, and lactation. Practice in artificial insemination and experience with pregnancy diagnosis in domestic animals. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 376. Domestic Animal Anatomy. (4 Credits)
A. Prerequisites: AGR 125 and 126. Fundamental anatomy of bones, muscles and organs of domestic animals, with a focus on comparative anatomy and how form dictates function. Practical experience with a whole-systems approach utilizing anatomical models and specimen dissections. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 377. Livestock Behavior and Welfare. (3 Credits)
A. Prerequisite: AGR 125 and 126. An introduction to animal behavior and its implications for animal welfare in modern animal husbandry. History of the animal welfare movement, current standards and applications in production settings will also be discussed. Students will engage in field trips and/or hands-on experiences to support learning outcomes and learn proper animal handling techniques. 2 Lec/2 Lab

View Course Learning Outcomes

1. {}

AGR 380. Technical Management of Dairy Cattle. (4 Credits)
I. Prerequisites: AGR 125 and 126. History, economics and nutritional importance and trends associated with the dairy industry including systems of selecting, breeding, feeding, sanitation, housing, marketing and management for financial success emphasizing both the cow and herd management. 3 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 381. Agriculture Structures. (3 Credits)
I. Study the principles of planning, drawing, locating, and constructing farm livestock and materials handling facilities. Also, develop an understanding of closely related structure aspects: such as, environmental control, waste management, ventilation, and structure design. 2 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 383. Diesel Power Systems. (3 Credits)
I. Study of the operation, maintenance, and repair of agricultural diesel powered systems; includes electrical systems, fuels, injection pumps, and nozzles laboratory practice. 2 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 390. On-Farm Dairy Evaluation. (3 Credits)
Prerequisites: AGR 125 and 126. On-site dairy farm inspections, evaluating management systems, and developing recommendations to enhance farm performance. 2 Lec/2 Lab.

View Course Learning Outcomes

1. {}

AGR 401. Peer-Led Team Learning in Agriculture. (1 Credit)
Pre-requisite or co-requisite of AGR 305, pre-requisite of AGR 301 or AGR 349, and students must have earned an A or B in the course they will be assisting with. Selected undergraduate students work as peer leaders for agriculture courses. Students will be expected to demonstrate specific competencies related to labs and assisting students. Development of oral and written communication skills of technical concepts in agriculture. Duties include regular discussion with the course instructor, assisting with laboratory sessions and participating in instructional activities.

View Course Learning Outcomes

1. {}

AGR 404. Advanced Pest Management. (3 Credits)
(3) II. Prerequisite: AGR 304 or OHO 304. Physical, biological, chemical, cultural, and genetic control of insects, weeds, and diseases. Specific emphasis on the science behind pest controls and use of organic and/or sustainable control methods.

View Course Learning Outcomes

1. {}

AGR 409. Agriculture Business Records and Analysis. (3 Credits)
I. Management and analysis of record systems for decision support involving organization, enterprise selection, and operation of agricultural and horticultural businesses.

View Course Learning Outcomes

1. {}

AGR 410. Independent Study in Agriculture: ___. (1-3 Credits)
I, II. Prerequisite: Departmental approval. Cross listed as OHO 410. Students choose a problem and work under the supervision of the instructor in the field of the problem. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment. May be retaken for a maximum of 6 credit hours, providing additional study projects differ. Credit will not be awarded to students who have credit for OHO 410.

View Course Learning Outcomes

1. {}

AGR 411. Senior Seminar. (1 Credit)
I, II. Prerequisite: senior standing. Preparation of graduates to enter the job market. Students complete oral presentations, resumes, job applications, cover letters, job interviews and register with CD and P. Includes overall assessment of the graduate and department curriculum.

View Course Learning Outcomes

1. {}

AGR 416. Soil Fertility and Management. (3 Credits)
(3) A. Prerequisite: AGR 215. Management of soils in turgrass, vegetable and crop production. Topics include soil fertility and various soil amendments such as lime, organic and inorganic fertilizers, soil fertility programs, problem soils, and soil conservation.

View Course Learning Outcomes

1. {}

AGR 421. Animal Nutrient Metabolism. (3 Credits)
II. Prerequisite: AGR 321 or instructor approval. Principles of nutrient utilization and feeding; structure, organization, synthesis, and catabolism of carbohydrates, proteins, and lipids; symptoms of nutrient deficiencies, nutritional disorders, and mechanisms of metabolic control.

View Course Learning Outcomes

1. {}

AGR 430. Field Crop Production. (3 Credits)
(3). A. Prerequisite: AGR 130 and 131 or OHO 131 and 132. Advanced study of crop production theories and practices for agronomic crops. Topics include ecological, physiological and economic aspects of production of currently relevant crops.

View Course Learning Outcomes

1. {}

AGR 440. Agricultural Financing. (3 Credits)
II. Uses and types of agricultural credit, credit institutions, and relating credit needs to farm enterprises.

View Course Learning Outcomes

1. {}

AGR 499. Agricultural Advocacy and Issues Capstone. (3 Credits)
(3). A. Prerequisite: Junior or Senior standing. Development of critical thinking skills, debates of current issues facing agriculture, and training to become agriculture advocates.

View Course Learning Outcomes

1. {}

AGR 501. Independent Study in Agriculture:___. (3 Credits)
A. A course for exceptional seniors involving independent study and research related to problems of a theoretical and/or practical nature. May be retaken to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

View Course Learning Outcomes

1. {}

AGR 509. Agriculture Research Methods and Interpretation. (3 Credits)
I. Prerequisite: Junior or Senior standing. Explores the scientific underpinnings of modern agriculture and adaptive management, including: the scientific method, observation, experimentation, and data interpretation with an examination of fallacies that masquerade as science.

View Course Learning Outcomes

1. {}

AGR 520. Global Food Systems. (3 Credits)
A. Prerequisite: AGR 308. A wide-ranging examination of various domestic and international food systems. The supply chain will be analyzed from field to farm gate through marketing and transportation to the consumer. Emphasis on the economics of the food supply chain.

View Course Learning Outcomes

1. {}

AGR 570. Advanced Technical Agriculture:___. (3 Credits)
A. Advanced study of agriculture with emphasis on updating, understanding, and developing competency in recent technology. May be retaken to a maximum of nine hours provided the topic varies.

View Course Learning Outcomes

1. {}

AGR 577. Workshop in the Conservation on Natural Resources. (3 Credits)
A. For teachers returning for graduate work. Instruction is given in the areas of soil, water, fish and wildlife, forest conservation, and methods of teaching related units at the elementary and junior high level.

View Course Learning Outcomes

1. {}

AGR 701. Independent Study in Ag. (3 Credits)
A. A course for graduate students involving independent study and research related to problems of a theoretical and/or practical nature. May be retaken once to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

View Course Learning Outcomes

1. {}

AGR 709. Ag Research Mthds & Intrprttn. (3 Credits)
I. Explores the scientific underpinnings of modern agriculture and adaptive management, including: the scientific method, observation, experimentation, and data interpretation with an examination of fallacies that masquerade as science.

View Course Learning Outcomes

1. {}

AGR 720. Global Food Systems. (3 Credits)
A. A wide-ranging examination of various domestic and international food systems. The supply chain will be analyzed from field to farm gate through marketing and transportation to the consumer. Emphasis on the economics of the food supply chain.

View Course Learning Outcomes

1. {}

AGR 770. Advanced Technical Agriculture. (3 Credits)
A. Advanced study of agriculture with emphasis on updating, understanding and developing competency in recent technology. May be retaken to a maximum of nine hours provided the topic varies.

View Course Learning Outcomes

1. {}

AGR 777. Wkshp Conservation of Nat Res. (3 Credits)
A. For teachers returning for graduate work. Instruction is given in the areas of soil, water, fish and wildlife, forest conservation, and methods of teaching related units at the elementary and junior high level.

View Course Learning Outcomes

1. {}

AGR 807. Adv Tech Study in Agr Problems. (1-3 Credits)
A. Prerequisite: advisor/department chair approval. Independent work, workshop, special topics, research problems, or seminars. May be retaken to a maximum of six hours. Student must have the independent study proposal form approved by faculty supervisor and department chair prior to enrollment.

View Course Learning Outcomes

1. {}

AGR 850. Agricultural Policy. (3 Credits)
A. An examination of agricultural policy in the US and its effects on production, food and nutrition, conservation and rural communities. Special attention is paid to the current Farm Bill.

View Course Learning Outcomes

1. {}