

AEC

Agricultural Economics

AEC 101 THE ECONOMICS OF FOOD AND AGRICULTURE. (3)

An introduction to the field of agricultural economics and some of the basic tools and concepts of decision making. Concepts are illustrated in terms of selected current social and economic issues including the role of agriculture in both a national and international dimension. Students who have completed ECO 201 are not eligible to take AEC 101 without the consent of the instructor.

AEC 300 TOPICS IN AGRICULTURAL ECONOMICS (Subtitle required). (1-3)

Study in special topics in agricultural economics. May be repeated under a different subtitle to a maximum of fifteen credits. Lecture, one to three hours; laboratory, zero to six hours per week. Prereq: ECO 201. [*Offered in fall and spring.*]

AEC 301 CAREER READINESS FOR AGRICULTURAL ECONOMICS. (1)

This course examines post-graduate opportunities, expectations, and strategies in agricultural economics. Students will explore information relevant to writing resumes, completing job applications, and participating in job interviews. Prereq: Standing in Agricultural Economics and a "C" or higher in ECO 201. [*Offered in fall and spring.*]

AEC 302 AGRICULTURAL MANAGEMENT PRINCIPLES. (4)

A comprehensive study of economic principles and management tools useful in farm and agribusiness decision making. Utilizes a systems approach to the planning, implementation and control of the agricultural business. Specific attention to application of management and decision theory, economic principles used in decision making, and risk management strategies. Emphasis on planning the future course of the business, acquiring and managing the necessary resources, and establishing physical and financial control over the business. Lab incorporates microeconomic applications of management principles developed in lectures. Prereq: "C" or better in ECO 201. [*Offered in fall and spring.*]

AEC 303 MICROECONOMIC CONCEPTS IN AGRICULTURAL ECONOMICS. (3)

Emphasis on the development of theoretical models of production and consumption economics and application of these models to problems. The importance of concepts of marginality to managers and consumers is emphasized. Role of risk and uncertainty in resource allocation is outlined. Prereq: "C" or better in ECO 201 and "C" or better in MA 123 or MA 113. [*Offered in fall and spring.*]

AEC 305 FOOD AND AGRICULTURAL MARKETING PRINCIPLES. (3)

Analysis of the market's role in determining prices and coordinating productive activities in the food and agricultural systems. Prereq: "C" or better in ECO 201. [*Offered in fall and spring.*]

AEC 306 TECHNICAL COMMUNICATION IN ECONOMICS. (2)

This course examines how to create and distribute original economic ideas in written and oral forms using appropriate digital technologies. Prereq: ECO 201; CIS/WRD 110 and 111 or equivalent; 30 credit hours of coursework. AEC 305 is a co-requisite (recommended) or prerequisite. This course fully satisfies the University's graduation composition and communication requirement (GCCR) for AGECE majors. To receive GCCR credit, students must earn an average (weighted) of "C" or better on all GCCR assignments. This course is a Graduation Composition and Communication Requirement (GCCR) course in certain programs, and hence is not likely to be eligible for automatic transfer credit to UK.

AEC 309 INTERNATIONAL AGRICULTURE, WORLD FOOD NEEDS AND U.S. TRADE IN AGRICULTURAL PRODUCTS. (3)

Present and projected world food/population balance by geographic regions; food production and world trade in agricultural products with an emphasis upon the implications for U.S. agriculture; an introduction to agricultural development problems of the less developed nations of Latin America, Africa, and Asia. Prereq: "C" or better in ECO 201. [*Offered in fall only.*]

AEC 311 LIVESTOCK AND MEAT MARKETING. (3)

Provides students with a unique and practical overview of the economics of the livestock and meat marketing system. Topics will include general marketing, price forecasting, price risk management, decision making, and capital investment analysis. Prereq: AEC 305. [*Offered in fall only.*]

#AEC 312 EQUINE MARKETS. (3)

This course provides an overview of the economics of equine markets, both domestic and international, and includes an examination of market structures and functions. Prereq: AEC 305 and C or better in ECO 201.

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- AEC 314 GRAIN MARKETING.** (1)
Study of production and utilization of grain by areas of the world, the marketing systems for grain, and the application of economic and marketing principles to the pricing and movement of grain. Prereq: AEC 305, AEC 321. [*Offered in fall only.*]
- AEC 316 COOPERATIVE MANAGEMENT AND MARKETING.** (1)
This course provides knowledge about the unique features of cooperatives and their role in a market economy and examines the structure organization, finance, management, and operations of cooperative organizations. Prereq: AEC 305. [*Offered in fall only.*]
- AEC 317 MARKETING HORTICULTURAL PRODUCTS.** (1)
This course examines the market structure and institutions associated with horticultural and nursery product markets within the context of formulating and evaluating alternative, firm-specific marketing strategies. Prereq: AEC 305. [*Offered in fall only.*]
- AEC 320 AGRICULTURE PRODUCT MARKETING AND SALES.** (3)
This course examines marketing activities within the U.S. food system. Sector performance is considered as well as the competitive behavior of firms within various agricultural market channels. Firm level marketing principles, methods, and strategies are considered, with a special focus on developing effective sales programs for agricultural products. Prereq: AEC 305. [*Offered in fall and spring.*]
- AEC 321 AGRICULTURAL FUTURES MARKETS.** (3)
The mechanics, theory, and practical application of hedging as related to agricultural commodities. The historical development of futures markets, functions of the futures markets, and the role of the speculator will also be explored. Prereq: AEC 303 and AEC 305. [*Offered in spring only.*]
- AEC 324 AGRICULTURAL LAW.** (3)
A study of legislation, administrative regulations, constitutions and court cases that have economic ramifications on agricultural and rural life. Prereq: "C" or higher in ECO 201. AEC majors who have completed AEC 325 or AEC 326 are not eligible to take AEC 324 without consent of the Director of Undergraduate Studies. [*Offered in fall and spring.*]
- AEC 325 EQUINE LAW.** (3)
This course examines equine law from tort and contractual perspectives dealing with basics of liability, purchase and sale, entity formation, constitutional and tax issues. Following the class, students should be able to recognize when it is necessary to retain a lawyer, but are not expected to be able to act as a lawyer. Prereq: "C" or higher in ECO 201. AEC majors who have completed AEC 324 or AEC 326 are not eligible to take AEC 325 without consent of the Director of Undergraduate Studies. [*Offered in spring only.*]
- AEC 326 PRINCIPLES OF ENVIRONMENTAL LAW.** (3)
Provides a basic knowledge of the principles of United States environmental law. Addresses the framework of the American Legal system as it applies to environmental regulation. Covers the sources of environmental law and reviews major federal environmental statutes and judicial decisions addressing specific issues. Prereq: "C" or higher in ECO 201. AEC majors who have completed AEC 324 or AEC 325 are not eligible to take AEC 326 without consent of the Director of Undergraduate Studies. [*Offered in fall and spring.*]
- AEC 340 HUMAN RESOURCE MANAGEMENT IN AGRICULTURE.** (3)
An overview of the management of the human resource in an agricultural context. Major components will include the acquisition, training, motivation, compensation, performance evaluation, and retention of the agricultural labor force. Other topics include the legal and taxation components of hired labor and working with a multi-cultural and multi-generational work force. Prereq: "C" or higher in ECO 201. [*Offered in spring only.*]
- #AEC 351 INTRODUCTION TO ANALYSIS WITH BUSINESS SOFTWARE.** (1)
An introduction to the use of software to locate, input, manipulate, and analyze agricultural economics data and how to interpret, format, and communicate answers to related questions. Prereq: C or higher in ECO 201.

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#AEC 361 INTERNATIONAL AGRIBUSINESS AND FOOD SYSTEMS. (3)

Agribusiness and farming are global industries, and managers need to be able to understand how events in other countries influence decisions made at the firm-level. This course examines the value-chains of select food and agricultural markets and the firms that provide the technology, production expertise, processing, and transformation of farm products into food entering global markets. Students will discuss supporting institutions like credit institutions, policy organizations, and regulatory agencies to show how these institutions can either foster or stifle business growth. This course may require domestic and/or international travel. Prereq: A "C" or higher in ECO 201 plus consent of instructor.

AEC 395 INDEPENDENT RESEARCH IN AGRICULTURAL ECONOMICS. (1-3)

Directed independent study of a selected problem. May be repeated to a maximum of six credits. Prereq: Consent of instructor or director of undergraduate studies and completion of a proposed plan of learning objectives and outcomes prior to registration. The student must have completed 60 credit hours prior to registering for AEC 395 and the student must earn a C or better in one of the following courses: AEC 303, AEC 302, or AEC 305. [Offered in fall, spring and summer.]

AEC 396 INTERNATIONAL STUDIES IN AGRICULTURAL ECONOMICS. (1)

The student will participate in a university-approved study abroad program or in an approved international study tour through the College of Agriculture or through additional international opportunities pre-approved by the director of undergraduate studies. [Offered in spring only.]

AEC 399 EXPERIENTIAL LEARNING IN AGRICULTURAL ECONOMICS. (1-6)

A field or community-based experience in the application of economics to agricultural or rural problems. May be repeated; a maximum of six credits allowed. Pass-fail only. Credit not available for the Agricultural Economics Major Requirements. Prereq: Nine hours in agricultural economics or economics, permission of instructor and department chairperson, and completion of learning agreement prior to registration. [Offered in fall, spring and summer.]

AEC 422 AGRIBUSINESS MANAGEMENT. (3)

Examines and analyzes decision-making tools and problem-solving techniques available to agribusiness managers. Provides learning experience in addressing contemporary economic, marketing and management issues through case study analyses, selected readings and computerized business simulations. Prereq: AEC 303, AEC 305, MGT 301, MKT 300, and either FIN 300 or AEC 441G. [Offered in fall and spring.]

AEC 425 FOREST MANAGEMENT. (4)

The principles of sustained yield forest management, management objectives, forest regulation, allowable cut, and timing of timber harvests. Students will identify management objectives for various properties and ownership types and integrate scientific knowledge and both timber and non-timber considerations with landowner objectives to derive management decisions. Prereq: Completion of the Spring Field Semester or consent of instructor. (Same as FOR 425.) [Offered in fall only.]

***AEC 441G AGRICULTURAL FINANCIAL MANAGEMENT. (3)**

Applies micro agricultural finance to farm and other agricultural business firms. Reviews elementary mathematics of finance and the objectives of financial management. Uses financial statements, cash flow analysis, financial leverage and other elements in applying the theory of capital investment for making management decisions. Prereq: AEC 302 and AEC 303. [Offered in spring only.]

AEC 445G INTRODUCTION TO RESOURCE AND ENVIRONMENTAL ECONOMICS. (3)

Economic analysis of the problems of assuring resource availability and environmental quality. Theoretical concepts and empirical tools for evaluating resource and environmental policy. Prereq: "C" or better in ECO 201 or consent of the instructor. [Offered in fall and spring.]

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AEC 471 INTERNATIONAL TRADE. (3)

This is advanced economic course in international trade. The first part of the course covers the basics of why countries trade, what explains the pattern of trade that we observe and what are the effects of trade on welfare and the distribution of income. The second part of the course covers issues concerning trade policy and looks at the positive and normative effects of trade policy and trade agreements as well as investigating topics of current interest. While the focus of the course is on theory, students will also be exposed to many applications of the theory as a means of both explaining the economic intuition and encouraging students to analyze the world around them from an economic perspective. Prereq: ECO 401 or equivalent. Agricultural Economics majors may substitute AEC 303 for this prerequisite. (Same as ECO 471.) [Offered in fall and spring.]

AEC 479 PUBLIC ECONOMICS. (3)

An application of economic analysis to the study of the role of government. Emphasis is on the reasons for and the effects of government intervention in the economy. Topics covered include: market failure, public goods and externalities, welfare policy, voting and public choice, taxation, public debt and cost-benefit analysis. Prereq: ECO 401 or equivalent. Agricultural Economics majors may substitute AEC 303 for this prerequisite. (Same as ECO 479.) [Offered in fall and spring.]

AEC 483 REGIONAL ECONOMICS. (3)

This course presents an economic approach to the study of regions. The emphasis is on the role of spatial relationships in economic activity. Topics considered include market area analysis, location theory, economic base and input-output analysis as well as regional economic development. Prereq: AEC 303. [Offered in fall only.]

AEC 490 QUANTITATIVE METHODS AND PRICE ANALYSIS. (3)

An integration of current issues in Agricultural Economics with oral and written communications, problem solving, and research. Major emphasis is on a senior paper and oral presentation. Prereq: AEC 302, 303, 305, ECO 391 and senior standing in Agricultural Economics. [Offered in fall only.]

AEC 503 PRICE THEORY AND APPLICATIONS. (3)

This course uses calculus to develop core concepts in microeconomics and show how they can be applied to agricultural and natural resource issues. A central objective of this course is to link mathematical techniques with economic analysis to show students that calculus provides an efficient way to study producer and consumer behavior. Prereq: AEC 303 and MA 113. [Offered in fall only.]

AEC 510 INTERNATIONAL TRADE AND AGRICULTURAL MARKETING. (3)

A study of institutional, economic and cultural factors that influence aggregate agricultural trade and exports of individual agribusinesses. Macro issues of agricultural trade policies are examined along with elements of international marketing for agricultural products. Prereq: AEC 303 (or equivalent) and AEC 305. [Offered in fall only.]

AEC 531 AGRICULTURAL PRICE ANALYSIS. (3)

The course links calculus-based microeconomic theory, industry-specific pricing systems, and empirical analysis of agricultural and food markets ranging from farm inputs to the consumer level. Students gain experience with tools and techniques used in empirical analysis of supply and demand. Prereq: AEC 503 and (ECO 391 or STA 570). [Offered in spring only.]

AEC 532 AGRICULTURAL AND FOOD POLICY. (3)

This course surveys a variety of current public policies that influence the agricultural and rural economies. Students are exposed to the conflicting views of those concerned with food and agricultural policy issues in an international economy. Economic principles are used to evaluate alternatives in terms of the general welfare of society. Prereq: AEC 303 and AEC 305. [Offered in spring only.]

AEC 545 RESOURCE AND ENVIRONMENTAL ECONOMICS. (3)

This is an advanced level course focused on economic analysis. It will help students frame natural resource and environmental problems so that they can be analyzed and solved. Major topic areas include water resources, fisheries, energy (and other non-renewable resources), agriculture, and pollution. Policy instruments such as pricing, emission fees, and tradable permits will be covered in detail. Prereq: AEC 303 or AEC 445G or consent of instructor. (Same as NRE 545.) [Offered in fall only.]

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- *AEC 580 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS. (1-3)**
Directed independent study of a selected problem that generally is sustained over an entire semester, requires data analysis, and results in a significant written product suitable for publication. May be repeated to a maximum of six credits. Prereq: Consent of instructor, director of undergraduate or graduate studies and completion of a proposed plan of learning objectives and outcomes prior to registration. [*Offered in fall, spring and summer.*]
- *AEC 590 INTRODUCTION TO QUANTITATIVE ECONOMICS I. (3)**
An introduction to mathematical approaches to economic theory. Emphasis on linear models, constrained optimization, and techniques used in comparative statics. Prereq: ECO 401 and MA 213, or graduate status, or consent of instructor. (Same as ECO 590.) [*Offered in fall only.*]
- AEC 606 ADVANCED AGRICULTURAL MARKETING. (3)**
A critical examination of objectives and results of various types of research in market organization, marketing functions, price analysis, markets over time, space and form, market information, commodity promotion programs, quality standards, and macroeconomic linkages to marketing. Prereq: AEC 624 and ECO 601 (may be concurrent). [*Offered in fall only.*]
- AEC 610 INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS. (3)**
This course analytically examines current empirical research in the area of agricultural trade. Prereq: ECO 601, AEC 624 and ECO 671. [*Offered in spring only.*]
- AEC 620 ADVANCED PRODUCTION ECONOMICS I. (3)**
An advanced treatment of production economics with emphasis on flexible product and factor price situations, factor demand functions, multiple product production, and poly-periodic production theory. Prereq: ECO 601. [*Offered in fall only.*]
- AEC 622 ADVANCED AGRIBUSINESS MANAGEMENT STRATEGIES. (3)**
This course integrates knowledge of economics, econometrics, business administration, finance, accounting, marketing, decision making, and research methodology. The focus is on analytical skills and scholarly academic research. Prereq: AEC 422, ECO 601 or AEC 603, an introductory course in econometrics, or consent of instructor. [*Offered in spring only.*]
- AEC 624 ADVANCED QUANTITATIVE METHODS IN AGRICULTURAL ECONOMICS. (3)**
This course uses statistical tools to model agricultural and economic systems. Subjects covered include: (1) the classical linear regression model, (2) statistical hypotheses tests, and (3) estimation techniques for single and simultaneous equation models. Prereq: ECO 391, STA 291 and MA 113. [*Offered in spring only.*]
- AEC 626 AGRICULTURE AND ECONOMIC DEVELOPMENT. (3)**
Analytical consideration of the role of agriculture in economic development in relation to overall development strategy at various stages of growth. Theoretical and policy issues of particular relevance to the agricultural development in underdeveloped agrarian economies with various resource, social, political and economic systems. Prereq: ECO 473G or consent of instructor. (Same as ECO 674.) [*Offered in spring only.*]
- AEC 640 ADVANCED AGRICULTURAL POLICY. (3)**
This course focuses on development of a framework to analyze alternate paradigms of the political economy. The framework focuses on the role of institutions that modify behavior of decision makers. Agricultural and food policies are evaluated in terms of the efficient use of resources and the general welfare of society. Prereq: ECO 601 or AEC 503. [*Offered in spring only.*]
- AEC 645 NATURAL RESOURCE ECONOMICS. (3)**
Economic analysis of natural resource use and environmental issues. Discussion of criteria for public decision making, welfare economics, market failure, benefit-cost analysis, and benefit estimation, as applied to natural resources and the environment. Prereq: ECO 590 and ECO 601.
- AEC 646 INTERTEMPORAL ALLOCATION OF NATURAL RESOURCES. (3)**
This course teaches the application of economic theory to the analysis of solutions for current and prospective natural resource problems. Such understanding will be geared toward fashioning, selecting and implementing planning associated with land, water, air, biological and other natural resources and conservation of the natural environment in serving the needs and desires of citizens. Prereq: ECO 660 and AEC 590.

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AEC 653 LOCAL ECONOMIC DEVELOPMENT. (3)

The course develops the capacity to employ the theories, practices and philosophies of economic development as applied to local areas. The primary geographic focus of the course is the rural south-east of the United States, but examples will be drawn from rural areas in other developed countries. Prereq: Graduate status in agricultural economics, public administration, economics, or consent of instructor. (Same as PA 653.) [Offered in spring only.]

AEC 661 PROGRAMMING MODELS IN AGRICULTURAL ECONOMICS. (3)

A study of some programming models useful in agricultural economics; includes an examination of the structure of the models themselves, economic interpretation of their components and their use in research in agricultural economics. Prereq: MA 416G and either AEC 620 or ECO 601. [Offered in fall only.]

AEC 662 QUANTITATIVE METHODS IN RENEWABLE AND NONRENEWABLE RESOURCE MANAGEMENT. (3)

Application of dynamic optimization methods to renewable and nonrenewable resource management. Includes problem formulation, mathematical problem solving, Matlab programming, simulations and optimal policies analysis. Case examples are used to demonstrate applicability and problem formulation in finance and general and partial equilibrium. Prereq: MA 113 and MA 162 or equivalent, and AEC 661 or equivalent. (Same as FOR 662.)

AEC 691 SOCIOLOGY OF FOOD AND AGRICULTURE. (3)

This seminar will analyze the transformation of agriculture and the food system in the historical context of increased globalization. Emphasis is given to key historical transitions, changing social relations surrounding production and consumption of food, and shifts in regulations and policy at the local, national, and/or international levels. Such emphases provide a framework for understanding the historical roots and future prospects for the socioeconomic problems confronting contemporary U.S. and global agriculture and food economies. Prereq: Graduate standing, or consent of instructor. (Same as CLD/SOC 691.)

AEC 724 APPLIED ECONOMETRICS. (3)

This course introduces students to the econometric models, estimation procedures, and model applications in the literature. The course includes an overview of different econometric models, model estimations using Stata and SAS, discussion of agricultural and applied economics papers applying these models, and writing mini projects and a term paper with econometric applications. Topics include discrete and limited dependent variable models, panel data models, time-series models, instrumental variables, survival analysis, spatial econometrics and other special topics. Prereq: ECO 703 or consent of instructor. [Offered in spring only.]

AEC 745 ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS. (3)

This course is a graduate-level survey of environmental and natural resource economics. Students will use mathematical models and econometric analysis to address topics including externalities and other market failures, environmental policies, management of renewable and nonrenewable resources, and non-market valuation. Prereq: ECO 701 and 703 (or equivalent courses), or consent of instructor. (Same as ECO 726.) [Offered in fall only.]

AEC 748 MASTER'S THESIS RESEARCH. (0)

Half-time to full-time work on thesis. May be repeated to a maximum of six semesters. Prereq: All course work toward the degree must be completed. [Offered in fall, spring and summer.]

AEC 749 DISSERTATION RESEARCH. (0)

Half-time to full-time work on dissertation. May be repeated to a maximum of six semesters. Prereq: Registration for two full-time semesters of 769 residence credit following the successful completion of the qualifying exams.

AEC 767 DISSERTATION RESIDENCY CREDIT. (2)

Residency credit for dissertation research after the qualifying examination. Students may register for this course in the semester of the qualifying examination. A minimum of two semesters are required as well as continuous enrollment (Fall and Spring) until the dissertation is completed and defended. [Offered in fall, spring and summer.]

AEC 768 RESIDENCE CREDIT FOR MASTER'S DEGREE. (1-6)

May be repeated to a maximum of 12 hours. Prereq: Consent of adviser and chairperson of department. [Offered in fall, spring and summer.]

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AEC 769 RESIDENCE CREDIT FOR DOCTOR'S DEGREE. (0-12)

May be repeated indefinitely. Prereq: Consent of adviser and chairperson of department.

AEC 780 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS. (1-3)

Open to graduate students who have the necessary training and ability to conduct research on a selected problem. May be repeated three times for a total of nine credits. Prereq: Consent of instructor and departmental chairperson. [*Offered in fall, spring and summer.*]

AEC 790 RESEARCH WORK IN AGRICULTURE ECONOMICS. (3-9)

Independent research under the direction of a faculty members and the Director of Graduate Studies. Prereq: Successful completion of written portion of AEC qualifying exam and permission of Director of Graduate Studies. [*Offered in fall, spring and summer.*]

AEC 796 SEMINAR (Subtitle required). (3)

An extended original investigation of a specific topic designed to give students experience in methods of research and an intensive study of a particular subject in the field of agricultural economics. May be repeated to a maximum of six credits under different subtitles. Prereq: Ph.D. applicant or candidate. [*Offered in fall and spring.*]