

## **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 201 INTRODUCTION TO FARM AND NATURAL RESOURCE FINANCE. (3)**

This course provides an introduction to basic concepts used in financial analysis that can be applied to farms and small agriculturally-related businesses. It provides an overview of basic financial statements and their role in business planning. These tools will be applied to case studies of farms, agribusiness, and forestry firms. Prereq: MA 123 and ECO 201 or ECO 202 or AEC 101.

### **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 6 credits. A course may be offered twice under a given subtitle. Lecture, 1-3 hours; laboratory, 0-6 hours per week. Prereq: AEC 101, ECO 201.

### **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: ECO 201.

### **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: ECO 201 and MA 113 or 123.

### **AEC 304 MACROECONOMIC CONCEPTS IN AGRICULTURAL ECONOMICS. (3)**

This course addresses the concern that U.S. farmers and the food industry are increasingly affected by macroeconomic forces and general conditions in the national economy. Interdependencies between agriculture, farm size, rural economic well-being and key macroeconomic variables including interest rates, foreign exchange rates and the rate of inflation will be examined. Prereq: AEC 101, ECO 202.

**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: ECO 201.

**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: AEC 101 or equivalent.

**AEC 311 LIVESTOCK AND MEAT MARKETING. (1)**

Provides students with a comprehensive look at the unique characteristics of the marketing system for livestock. Problems in both the feeder animal sector and the fed animal sector will be considered. Lecture, three hours per week for one-third of the semester. Prereq: AEC 305.

**AEC 313 TOBACCO MARKETING. (1)**

Analysis of the structure of the production and marketing system for tobacco including institutions and public regulation. Application of marketing methods and principles to tobacco. Lecture, three hours per week for one-third of the semester. Prereq: AEC 305.

**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.

**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.

**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.

**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.

**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 305.

**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: AEC 101.

**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: AEC 101, nine hours in agricultural economics or economics, and permission of instructor, department chairperson, and completion of learning agreement prior to registration.

**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 305, FIN 300, MGT 301, MKT 300, and senior standing in Agricultural Economics.

**AEC 424 PRINCIPLES OF ENVIRONMENTAL LAW. (2)**

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: AEC 101.

**AEC 425 TIMBER MANAGEMENT. (4)**

The principles of sustained yield timber management, organization of the forest area, management objectives, timber valuation, regulation of the cut, and timber management plans. Lecture, three hours; laboratory, two hours. Prereq: MA 162, FOR 201, and Summer Camp (FOR 375, 376, 377, 378, and 379), or consent of instructor. (Same as FOR 425.)

**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: FIN 300.

**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: ECO 201, or consent of instructor.

**\*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. (Same as ECO 471.)

**\*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.)

**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: ECO 202.

**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.

**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 305 and ECO 401.

**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 305.

**AEC 545 RESOURCE AND ENVIRONMENTAL ECONOMICS. (3)**

This course builds on the principles of economics to analyze the problems in achieving an efficient allocation of resources. It provides the theoretical concepts for evaluating environmental policies and the tools necessary in the application of benefit/cost analysis. Prereq: ECO 201. (Same as NRC 545.)

**AEC 580 SPECIAL PROBLEMS 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, director of undergraduate or graduate studies and completion of a proposed plan of learning objectives and outcomes prior to registration.

**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 113, or consent of instructor. (Same as ECO 590.)

**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 or concur: AEC 590 and ECO 601.

**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.

**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.

**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 and STA 291.

**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.)

**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.

**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.

**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.)

**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.

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

Design and analysis of optimization models in renewable resource management. Includes survey of applications in mathematical programming. CPM-PERT, Markov processes, and Game theory. Case examples are used to demonstrate applicability and problem formulation in management of industrial and public forests. Prereq: MA 113 and MA 162 or equivalent, and AEC 445G or equivalent. (Same as FOR 662.)

**AEC 691 STRUCTURE OF U.S. AGRICULTURE. (3)**

This seminar will analyze the structural transformation of U.S. agriculture in the 19th and 20th centuries in the context of sociological theory. Emphasis is given to key historical transitions,

changing social relations of production and state policy. Such emphases provide a framework for understanding the historical roots and future prospects for the socioeconomic problems confronting contemporary U.S. agriculture. Prereq: Graduate standing in sociology/agricultural economics or consent of instructor. (Same as SOC 691.)

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.

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.

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.

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.

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.

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.

