

# AGEC - AGRICULTURAL ECONOMICS

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## **AGEC 601 Commodity Futures and Options Markets**

**Credits 3. 3 Lecture Hours.**

Price risk management using agricultural commodity futures and options markets, theories of hedging and formulation of optimal hedging strategies, applied hedging strategies evaluated with emphasis on options relative to futures.

**Prerequisites:** One course in calculus and one course in statistics.

## **AGEC 603 Land Economics**

**Credits 3. 3 Lecture Hours.**

Application of economic, financial, legal and related concepts and tools for decision making in land management, real estate development and appraisal of land and attendant resources; public and private property rights and current land and resource management issues emphasized; real estate valuation methods and use of electronic information systems studied.

**Prerequisite:** AGECE 422 or equivalent.

## **AGEC 604/PSAA 663 Natural Resource Economics**

**Credits 3. 3 Lecture Hours.**

Critical evaluation of policies and procedures in natural resource development and use; identification of problems in resource development, the political-economic decision-making processes and analytical tools which can contribute to economic decisions.

**Prerequisite:** ECON 323.

**Cross Listing:** PSAA 663/AGECE 604.

## **AGEC 605 Rural Real Estate Appraisal and Organization**

**Credits 3. 3 Lecture Hours.**

Concepts of property rights and their valuation; factors affecting the value of these rights are related to general economic theory to explain real estate market process; specific applications of appraisal techniques in valuing urban and rural real properties.

**Prerequisite:** AGECE 422.

## **AGEC 606 Water Resource Economics**

**Credits 3. 3 Lecture Hours.**

Examination of economic concepts and tools contributing to the solution of water scarcity problems; development of working knowledge of water resource economics; policy options established and explored; analytical tools for performing policy and project assessment introduced and applied.

**Prerequisite:** MATH 142.

## **AGEC 607 Research Methodology**

**Credits 3. 3 Lecture Hours.**

Scientific method in economic research: problem identification and selection, hypothesis testing, assumptions, model selection, data communication; evaluation of research studies and development of thesis prospectus or equivalent.

**Prerequisite:** MS or PhD graduate classification.

## **AGEC 608 Economics of Foreign Intervention, Conflict, and Development**

**Credits 3. 3 Lecture Hours.**

Economic models of conflict and development, socio-political models of conflict; conflict and vulnerable groups; advanced quantitative tools and methods in conflict and development research; interaction between poverty, natural resources and conflict in developing countries; role of multilateral, bilateral and strategic stakeholders in conflict resolution and economic development.

## **AGEC 610 Economics of Biosecurity**

**Credits 3. 3 Lecture Hours.**

Economic and policy issues involved with decision making under risk of accidental or deliberate events of agricultural threats involved with animal diseases, food contamination, invasive species, infrastructure disruption, etc.; issues regarding assessments of damages, vulnerability and decision making regarding prevention, detection, response, and recovery.

**Prerequisite:** Graduate classification.

## **AGEC 613 International Agricultural Development Policy**

**Credits 3. 3 Lecture Hours.**

Utilizes real-world examples depicting environments of international development institutions and programs concerning water management, gender, climate change agricultural extension, value chains, agricultural finance and many other issues in developing countries, with emphasis on smallholder agriculture; capstone for the certificate in International Agriculture and Nature Resource Management but available to other majors.

**Prerequisites:** AGECE 422, AGECE 430, AGECE 452, AGECE 604/PSAA 663, AGECE 606, or other equivalent macroeconomic course.

## **AGEC 614 Global Food and Agribusiness Policy**

**Credits 3. 3 Lecture Hours.**

Public policies and programs affecting agriculture and agribusiness; development of policies and programs, identifying relevant issues, reviewing means to attain desired goals, and development of methods to evaluate the consequences of alternative farm policies on U.S. agriculture, agribusiness, trade and resources.

**Prerequisites:** AGECE 619 or ECON 607 and MATH 142.

## **AGEC 619 Managerial Economics in Agribusiness**

**Credits 3. 3 Lecture Hours.**

Practical application of operational and strategic decision-making tools to agribusiness, focusing on important managerial and economic principles and understanding needed to carry out these functions.

**Prerequisites:** ECON 323, MATH 142 and STAT 303.

## **AGEC 620 Food Security, Climate and Conflict**

**Credits 3. 3 Lecture Hours.**

Economic models of food production and consumption in conflict regimes; the micro-economics of violence; the dynamic relationships of climate and agricultural production; potential impacts of climate change on food and socio-political security; food security among insurgent groups; conflict resistant food systems; and the shifting relationships between poor and rich nations in relationship to climate, food and conflict.

**Prerequisite:** ECON 323 or equivalent, or approval of instructor.

## **AGEC 621 Econometrics for Agribusiness**

**Credits 3. 3 Lecture Hours.**

Econometric application and practice; analysis and interpretation of economic data for decision making and microcomputer implementation.

**Prerequisites:** MATH 142; STAT 303;

**corequisite:** ECON 323; ECON 311 or AGECE 430.

## **AGEC 622 Agribusiness Analysis and Forecasting**

**Credits 3. 3 Lecture Hours.**

Design, construction, use and evaluation of simulation, forecasting and optimization models to solve applied problems confronting decision makers in agribusiness.

**Prerequisite:** AGECE 621 or approval of instructor.

**AGEC 625 Environment of Agribusiness****Credits 3. 3 Lecture Hours.**

Analysis of the economic, social, political, technological and legal forces that impact the way in which global agribusiness firms compete; emphasis on intensive case study analysis.

**Prerequisites:** AGEC 619 and AGEC 621.**AGEC 629 Strategic Agribusiness Management****Credits 3. 3 Lecture Hours.**

Practical application of operational and strategic decision-making tools to agribusiness; emphasis on problem recognition and economic analysis related to production, marketing and finance decisions facing agribusiness firms.

**Prerequisites:** AGEC 619, AGEC 621 and AGEC 625.**AGEC 630 Financial Analysis for Agribusiness Firms****Credits 3. 3 Lecture Hours.**

Application of financial planning and analysis to agribusiness firms; capital budgeting and selection of investments; the role of debt structure and liquidity in firm growth and stability; alternatives for gaining control over financial resources, managing risk and maintaining business efficiency over time.

**Prerequisites:** ACCT 640 and FINC 635.**AGEC 633 Sustainability in World Development****Credits 3. 3 Lecture Hours.**

Economic development defined; economic structure, economic efficiency, equity, conservation and role of sustainability, characteristics of developing countries; problems facing development planners, policy makers, resource managers; role of local, regional and international institutions, policies, civil society, biodiversity, and climate change; economic foundation of project development, design, financing, and implementation issues.

**Prerequisites:** ECON 607 or equivalent.**AGEC 634 Rural Financial Markets and Financial Planning****Credits 3. 3 Lecture Hours.**

Organization, structure, conduct, and regulation of lending institutions serving commercial agriculture and rural borrowers; financial statement analysis; cash management; investment planning; loan portfolio analysis; management of the lending function of lenders serving rural businesses.

**Prerequisite:** Graduate classification.**AGEC 636 Agribusiness Markets and Applied Welfare Analysis****Credits 3. 3 Lecture Hours.**

Theory and practice of consumer and firm behavior in markets; the effects of various policies on markets; welfare measurement applied to problems related to the farm economy; food and resource processing; resource allocations decisions.

**Prerequisites:** AGEC 635 and 661; ECMT 676; ECON 629 and ECON 630.**AGEC 637 Production Economics and Dynamic Optimization in Agricultural Economics****Credits 3. 3 Lecture Hours.**

Production under certainty and uncertainty with emphasis on agribusiness firm behavior; economic theory and analytical and numerical methods related to dynamic optimization problems.

**Prerequisites:** AGEC 661; ECMT 675; ECON 629 and ECON 630.**AGEC 638 Managerial Economics for Regulatory Science****Credits 3. 3 Lecture Hours.**

Economic and business frameworks within which the regulations and standards governing the production of food operate; economic theories of the firm and fundamental calculations in finance as the foundation for cost/benefit analyses of existing and proposed regulations; applications to U.S. and global regulations and standards.

**AGEC 639/SCSC 635 Comparative Global Standards in Food Systems****Credits 3. 3 Lecture Hours.**

Laws, regulations and standards governing the production, distribution, processing and marketing of food across regions of the world; international standard setting bodies and risk assessment committees; regulatory equivalency and harmonization; product approval procedures; cost/benefits of global standards and trade agreements.

**Cross Listing:** SCSC 635/AGEC 639.**AGEC 641 Operations Research Methods in Agricultural Economics****Credits 3. 3 Lecture Hours.**

Theory and practice regarding the application of operations research tools to agricultural economics problem areas. Mainly concentrates on optimization approaches.

**Prerequisite:** AGEC 622.**AGEC 642 Dynamic Optimization in Agricultural and Applied Economics****Credits 3. 3 Lecture Hours.**

Economics of problems of dynamic optimization, focusing on numerical and analytical methods; applications in a wide range of issues related to agricultural and applied economics are considered.

**Prerequisites:** ECON 629 or approval of instructor.**AGEC 643 Applied Simulation in Agricultural Economics****Credits 3. 3 Lecture Hours.**

Design, construction, validation and use of Monte Carlo simulation models for risk analysis of economic systems; parameter estimation and simulation of multivariate probability distributions in econometric and behavioral models used for business and policy analysis under risk.

**Prerequisites:** AGEC 622 and AGEC 661 or approval of instructor.**AGEC 645****Credits 3. 3 Lecture Hours.****AGEC 652 International Agribusiness Trade Analysis****Credits 3. 3 Lecture Hours.**

Traditional trade theory encompassing the concepts of comparative advantage, the Heckscher-Olin-Samuelson model, the gain from specialization and trade, partial equilibrium analysis of free trade, violation of the free trade model, welfare effects of trade, trade creation and diversion, introduction to growth and development theories, the relationship between trade and development and related concepts.

**Prerequisites:** ECON 607 and MATH 142.**AGEC 659 Ecological Economics****Credits 3. 3 Lecture Hours.**

Study of the relationships between ecosystems and economic systems; understanding the effects of human economic endeavors on ecological systems and how the ecological benefits and costs of such activities can be quantified and internalized.

**Prerequisite:** Graduate classification.**Cross Listing:** ESSM 671 and RENR 659.**AGEC 661 Applied Econometric Methods in Agriculture and Resources I****Credits 3. 3 Lecture Hours.**

Application of econometric methods in a theoretical framework for the analysis of agricultural markets and farm firm behavior; emphasis on specifying and estimating agricultural production and demand functions and agricultural sector models; selected topics according to student needs.

**Prerequisite:** ECMT 676.

**AGEC 662 Applied Econometric Methods in Agriculture and Resources II**  
**Credits 3. 3 Lecture Hours.**

Familiarization with theory and econometric techniques frequently used in applied microeconomic research with emphasis on specification, estimation, interpretation and evaluation of these models.

**Prerequisites:** ECON 629 and AGECE 661.

**AGEC 671 Fundamentals in Agribusiness and Managerial Economics**  
**Credits 3. 3 Lecture Hours.**

Economic theory and methods for analyzing operational and strategic problems facing managers of food, fiber and resource businesses; financial, marketing and management topics, including principal-agent, bargaining power, contract theory and business forecasting.

**Prerequisites:** ECON 629 and ECON 630.

**AGEC 672 Fundamentals in Agricultural Markets and Information Economics**  
**Credits 3. 3 Lecture Hours.**

Application of information economics theory for analysis of vertical and horizontal relationships between firms along the supply chain.

**Prerequisites:** AGECE 636 and 661; ECMT 676; ECON 629 and ECON 630.

**AGEC 673 Fundamentals in Resource and Environmental Economics**  
**Credits 3. 3 Lecture Hours.**

Economic theories and empirical regularities related to the use and management of the environment and natural resources; valuation techniques, externalities, and intertemporal resource management.

**Prerequisites:** AGECE 635, AGECE 636, AGECE 637; ECON 629 and ECON 630.

**AGEC 674 Food and Agricultural Trade and Policy Analysis**  
**Credits 3. 3 Lecture Hours.**

Trade policy, farm policy, macroeconomic policy, resource policy and development policy; analysis of policy impacts outside perfect competition and free trade assumptions.

**Prerequisites:** AGECE 614 and AGECE 652 or approval of instructor.

**AGEC 676 Frontiers in Markets and Information Economics**  
**Credits 3. 3 Lecture Hours.**

Exploration of advanced topics in the field of markets and information economics. May be taken twice for credit.

**Prerequisite:** Graduate classification.

**AGEC 677 Frontiers in Natural Resource and Environmental Economics**  
**Credits 3. 3 Lecture Hours.**

Exploration of advanced topics in the field of natural resource and environmental economics. May be taken twice for credit.

**Prerequisite:** Graduate classification.

**AGEC 681 Seminar**

**Credit 1. 1 Lecture Hour.**

Objectives are to define research problems, develop research problem statements with objectives and hypothesis and specify relevant models to accomplish the objectives and develop the skills in written communication.

**AGEC 684 Professional Internship**

**Credits 1 to 3. 1 to 3 Other Hours.**

Pre-professional experience within department guidelines conducted in the area of the student's field of interest.

**Prerequisite:** Graduate classification.

**AGEC 685 Directed Studies**

**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of a selected problem in the field of agricultural economics.

**AGEC 689 Special Topics in...**

**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of agricultural economics. May be repeated for credit.

**AGEC 691 Research**

**Credits 1 to 23. 1 to 23 Other Hours.**

Thesis or dissertation research.

**AGEC 693 Professional Study**

**Credits 1 to 9. 1 to 9 Other Hours.**

Professional paper undertaken as a requirement for the Master of Science Non-Thesis or as an elective for the Master of Agribusiness. May be taken more than once, but not to exceed 3 hours of credit towards a degree.

**Prerequisite:** Approval of instructor.

**AGEC 695 Frontiers in Agribusiness and Managerial Economics**

**Credits 3. 3 Lecture Hours.**

Exploration of advanced topics in the field of agribusiness and managerial economics. May be taken two times for credit.

**Prerequisite:** Graduate classification.