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.  
**Prerequisite:** 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:** AGEC 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/AGEC 604.

**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 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 635 Consumer Demand Analysis for Food and Agricultural Products
Credits 3. 3 Lecture Hours.
Analytical and empirical treatments of consumer behavior; use of neoclassical theory and modern adaptations in consumer demand analysis; specification, estimation, interpretation and evaluation of models of consumer behavior with emphasis on food commodities.
Prerequisites: ECMT 676, ECON 629 and AGEC 661.

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-Ohlin-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: ESM 671 and RENR 659.

AGEC 661 Applied Econometric Methods in Agriculture
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 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: AGE 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: AGE 635, AGE 636, AGE 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: AGE 614 and AGE 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.