

# Agricultural Economics (AGEC)

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## Courses

### **AGEC 11003. Principles of Agricultural Microeconomics. 3 Hours.**

Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGECE 11003 or ECON 22003 or ECON 220H3. Pre- or Corequisite: MATH 11003. (Typically offered: Fall, Spring and Summer)  
This course is cross-listed with ECON 22003.

### **AGEC 110H3. Honors Principles of Agricultural Microeconomics. 3 Hours.**

Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGECE 11003 or ECON 22003 or ECON 220H3. Pre- or Corequisite: MATH 11003. (Typically offered: Fall and Spring)  
This course is cross-listed with ECON 22003, AGECE 11003.

### **AGEC 21003. Principles of Agricultural Macroeconomics. 3 Hours.**

Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGECE 21003 or AGECE 210H3 or ECON 21003 or ECON 210H3. Pre- or Corequisite: MATH 11003. (Typically offered: Fall, Spring and Summer)  
This course is cross-listed with ECON 21003.

### **AGEC 210H3. Honors Principles of Agricultural Macroeconomics. 3 Hours.**

Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGECE 21003 or AGECE 210H3 or ECON 21003 or ECON 210H3. Pre- or Corequisite: MATH 11003. Prerequisite: Honors standing. (Typically offered: Fall and Spring)  
This course is cross-listed with ECON 21003, AGECE 21003.

### **AGEC 21403. Agribusiness Financial Records. 3 Hours.**

Principles of small agricultural business management accounting practices are taught to allow students to gain hands-on experience with financial record keeping for a business. Resulting financial statements are analyzed to determine opportunities for enhancing financial efficiency. Prerequisite: (ASTM 29003 or ISYS 11203) and (AGECE 11003 or ECON 22003 or ECON 21403). (Typically offered: Fall, Spring and Summer)

### **AGEC 23003. Introduction to Agribusiness. 3 Hours.**

Introduction to agribusiness issues as they relate to the food processing, wholesale and retail sectors of the agricultural industry. Coverage of methods and tools agribusiness managers use to evaluate business opportunities. Case studies serve to communicate concepts of product distribution, design, promotion and pricing in the development of a marketing plan. Prerequisite: AGECE 11003 or ECON 22003. (Typically offered: Fall, Spring and Summer)

### **AGEC 24003. Quantitative Tools for Agribusiness. 3 Hours.**

Introduction to quantitative methods used in agricultural economics and agribusiness with an emphasis on skills and techniques that will enhance the ability of students to perform in upper division coursework. Provides an overview of statistical and optimization methods used in research problems, economic theory, and applied decision making activities. Prerequisite: (AGECE 11003 or ECON 22003 or ECON 21403) and MATH 22003 (or higher MATH course from the University Core excluding MATH 21803). (Typically offered: Fall)

### **AGEC 33003. Food and Agricultural Marketing. 3 Hours.**

Surveys consumer trends in food markets and the marketing activities of the food and fiber system. Emphasizes marketing concepts for both commodities and differentiated food products. Topics include applied consumer and price theory; marketing management; structure and performance of the food system; and current agricultural marketing topics. Prerequisite: AGECE 11003 or ECON 22003 or ECON 21403. (Typically offered: Fall, Spring and Summer)

### **AGEC 33103. Agribusiness Sales. 3 Hours.**

Principles of professional sales and sales management techniques used in food and agricultural firms; develop a professional sales presentation; study current agribusiness industry professional sales persons and sales practices and techniques. Prerequisite: AGECE 11003 or AGECE 21003 or ECON 21003 or ECON 22003 or ECON 21403 or equivalent. (Typically offered: Spring)

### **AGEC 33703. Futures and Options Markets. 3 Hours.**

Theory and mechanics of commodity futures and options markets including trading, margin, fees, etc. Price relationships between cash, futures and options. Fundamental and technical price analysis. Price risk management strategies for producers and users of agricultural commodity marketing plan. Speculative and hedging simulation exercises. Prerequisite: AGECE 11003 or ECON 22003. (Typically offered: Fall and Spring)

### **AGEC 34003. Farm Business Management. 3 Hours.**

Application of economic principles for the profitable organization and operation of the farm business. Focuses upon agricultural production management decision-making tools: budgeting techniques (enterprise, partial, cash flow), balance sheet, income statement, cash flow, investment analysis and risk management. Recommended: AGECE 11003 (or ECON 22003), AGECE 21403, and ASTM 29003. (Typically offered: Fall, Spring and Summer)

### **AGEC 34103. Principles of Environmental Economics. 3 Hours.**

An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGECE 11003 or ECON 22003. (Typically offered: Spring)  
This course is cross-listed with ENSC 34103.

### **AGEC 341H3. Honors Principles of Environmental Economics. 3 Hours.**

An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Corequisite: Drill component. Prerequisite: AGECE 11003 or ECON 22003. (Typically offered: Spring)  
This course is cross-listed with AGECE 34103, ENSC 34103.

### **AGEC 35003. Agricultural Law I. 3 Hours.**

Examination of those areas of law especially applicable to agriculture. Fundamentals of contract law, torts law, and property law will accompany discussion of major areas of agricultural law; acquisition and disposal of farmland; farm tenancies; rights and limitations in the use and ownership of farmland; water law; environmental protection; protection of the productivity of agricultural land; and the law of sales and secured transactions in an agricultural context. (Typically offered: Fall and Spring)

**AGEC 35203. Environmental and Natural Resources Law. 3 Hours.**

Principles of environmental and natural resources law relevant to agriculture, food and the environmental sciences; legal principles relating to regulation of water, air, hazardous substances, land, wildlife, livestock, and water rights. Principles of civil and criminal liabilities and other developing legal and regulatory issues relating to agriculture and natural resources. (Typically offered: Spring Even Years)

**AGEC 36003. New and Emerging Issues in Ag Law and Policy. 3 Hours.**

This course explores the evolving landscape of agricultural law and policy, addressing the most pressing and current issues affecting the agricultural sector today. Students will examine the legal, regulatory, and policy frameworks that govern agriculture, with a focus on recent developments and emerging challenges. Prerequisite: AGEC 35003. (Typically offered: Spring)

**AGEC 4000V. Special Problems. 1-6 Hour.**

Special studies and readings conducted under the direct supervision of staff members to satisfy the requirements of individual students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

**AGEC 4010V. Internship in Agribusiness. 1-6 Hour.**

A supervised practical work experience in an agribusiness firm or a governmental or industrial organization having direct impact on agriculture in order to gain professional competence and insight to employment opportunities. Prerequisite: junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.

**AGEC 4020V. Special Topics. 1-3 Hour.**

Studies of selected topics in agricultural economics not available in other courses. (Typically offered: Irregular) May be repeated for degree credit.

**AGEC 40401. Agribusiness Capstone. 1 Hour.**

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and agribusiness. This course is designed for students to demonstrate mastery of a number of subjects within the agribusiness discipline. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

**AGEC 40903. Risk in Agricultural Production. 3 Hours.**

From its initial inception in the 1938 farm bill to debates centered on farm bills, the Federal Crop Insurance Program has experienced myriad changes from introduction of new covered crops and premium subsidy rates to the introduction of new products and insurable rate structures. Underpinning the FCIP is economic theory, statistics, and changes to the political landscape of U.S. agricultural policy. This course trains students in applying theory, statistics, and institutional knowledge to managing risk in agricultural production. Lecture 3 hours per week. Prerequisite: AGEC 11003, AGEC 23003, (MATH 22003 (or Higher Level Calculus)), and (AGEC 24003 or MATH 21003 or BUSI 10303). (Typically offered: Fall)

**AGEC 41103. Agricultural Prices and Forecasting. 3 Hours.**

Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis. Prerequisite: ((AGEC 11003 or ECON 22003) and (AGEC 24003 or MATH 21003 or BUSI 10303) and (MATH 22003 or higher, excluding MATH 21803)). (Typically offered: Spring)

**AGEC 41203. Legal Issues in Animal Agriculture. 3 Hours.**

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)

This course is cross-listed with ANSC 41203, POSC 41203.

**AGEC 41403. Agricultural Finance. 3 Hours.**

Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. Prerequisite: (AGEC 11003 or ECON 22003) and (AGEC 21003 or ECON 21003) and (AGEC 21403 or ACCT 20103). (Typically offered: Fall and Spring)

**AGEC 41603. Agricultural and Rural Development. 3 Hours.**

Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 11003 (or ECON 22003). (Typically offered: Spring)

**AGEC 416H3. Honors Agricultural and Rural Development. 3 Hours.**

Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 11003 (or ECON 22003) and honors standing. (Typically offered: Fall)

This course is equivalent to AGEC 41603.

**AGEC 42403. Agribusiness Strategy. 3 Hours.**

Addresses problems of strategy formulation in agribusiness emphasizing current problems and cases in agriculture. Surveys modern and classic perspectives on strategy with applications to agribusiness. Examines the development of firm level strategies within the structure and competitive environment of agricultural firms and industries. Prerequisite: MATH 22003 and (AGEC 11003 or ECON 22003 or ECON 21403) and (AGEC 34003 or AGEC 21403 or ACCT 20103). (Typically offered: Irregular)

**AGEC 43003. Agribusiness Marketing Management. 3 Hours.**

Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Prerequisite: AGEC 23003 and AGEC 33003. (Typically offered: Spring and Summer)

**AGEC 43103. Agricultural Business Management. 3 Hours.**

The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Senior standing recommended. Prerequisite: (AGEC 21403 or ACCT 20103) and AGEC 23003. (Typically offered: Fall)

**AGEC 43203. AgriBusiness Entrepreneurship. 3 Hours.**

Agribusiness entrepreneurship is the process of bringing food or rural-based products and services from conceptualization to market. The course presents the opportunities, problems and constraints facing individuals and firms operating in rural or isolated markets while emphasizing the steps in conceptualization, development, marketing, and delivery-selling of agribusiness rural products. Prerequisite: AGEC 11003 or equivalent. (Typically offered: Spring)

**AGEC 43703. Basis Trading: Applied Price Risk Management. 3 Hours.**

This course provides students an opportunity to gain a detailed working knowledge of how basis trading concepts and practices are applied to agricultural markets and to develop a skill set that can be put immediately into practice in any basis trading operation. Prerequisite: AGEC 33703 or consent of instructor. (Typically offered: Spring and Summer)

**AGEC 43803. Basis Trading: Case Study. 3 Hours.**

This course provides an opportunity to apply principles learned in AGECE 43703 to grain merchandising using the case study approach. The course will involve in-class meetings supplemented with faculty-directed group-based learning experiences involving professional grain merchandisers. Group activities will follow the traditional case study method. Prerequisite: AGECE 43703. (Typically offered: Fall)

**AGEC 44003. Advanced Farm Business Management. 3 Hours.**

Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGECE 34003 and (ASTM 29003 or equivalent) and (AGECE 21403 or ACCT 20103). (Typically offered: Fall)

**AGEC 440H3. Honors Advanced Farm Business Management. 3 Hours.**

Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGECE 34003, (ASTM 29003 or equivalent), (AGECE 21403 or ACCT 20103) and honors standing. (Typically offered: Fall)

This course is equivalent to AGECE 44003.

**AGEC 46003. Food Economics and Health. 3 Hours.**

This course provides an advanced overview of selected topics in food economics, food and nutrition policy and the interface between nutrition programs and health policy. Students will develop an understanding of economic and policy concepts of food, nutrition, and health. The course emphasizes analytical tools that can be applied to study issues in food, nutrition, and health facing the US and world populations. Prerequisite: (AGECE 11003 or ECON 22003) and (AGECE 24003 or BUSI 10303 or MATH 21003 or MATH 22003 or MATH 30803 or MATH 30103). (Typically offered: Irregular)

**AGEC 46103. Political Economy of Agriculture and Food. 3 Hours.**

Agricultural and food policies are studied from domestic and international perspectives. Laws, regulations, decisions and actions by governments and other institutions are examined in terms of rationale, content, and consequences. Economic and political frameworks are used to assess policies in terms competitive structure, operation, and performance of farming and food systems. Prerequisite: (AGECE 11003 or ECON 22003) and (AGECE 21003 or ECON 21003) and (PSYC 20003 or SOCI 10103 or HDFS 26003). (Typically offered: Fall)

**AGEC 46203. International Agricultural Trade and Commercial Policy. 3 Hours.**

Analysis of agricultural market competition and performance in a global economy. The impact of domestic and international agricultural policies on domestic and international markets and welfare. Economic principles applied to the interaction of economic events in the world food economy. Prerequisite: (AGECE 11003 or ECON 22003) and (AGECE 21003 or ECON 21003). (Typically offered: Fall)

**AGEC 5000V. Special Problems. 1-3 Hour.**

Individual reading and investigation of a special problem in agricultural economics not available under regular courses, under the supervision of the graduate faculty. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

**AGEC 50101. Seminar. 1 Hour.**

Presentation and discussion of graduate student research. Formal presentations are made by all graduate students. Consideration given to research design, procedures, and presentation of results. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

**AGEC 5020V. Special Topics. 1-3 Hour.**

Advanced studies of selected topics in agricultural economics not available in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

**AGEC 5030V. Internship in Agricultural Economics. 1-3 Hour.**

On-the-job application of skills developed in the M.S. program. (Typically offered: Fall, Spring and Summer)

**AGEC 50403. Agricultural Finance. 3 Hours.**

Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. Graduate degree credit will not be given for both AGECE 41403 and AGECE 50403. Prerequisite: (AGECE 11003 or ECON 22003) and (AGECE 21003 or ECON 21003) and (AGECE 21403 or ACCT 20103). (Typically offered: Fall)

**AGEC 50503. Advanced Farm Business Management. 3 Hours.**

Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Graduate degree credit will not be given for both AGECE 44003 and AGECE 50503. Prerequisite: AGECE 34003 and ASTM 29003 or equivalent. (Typically offered: Fall)

**AGEC 50703. Basis Trading: Applied Price Risk Management. 3 Hours.**

This course provides students an opportunity to gain a detailed working knowledge of how basis trading concepts and practices are applied to agricultural markets and to develop a skill set that can be put immediately into practice in any basis trading operation. Graduate degree credit will not be given for both AGECE 43703 and AGECE 50703. Prerequisite: AGECE 33703 or consent of instructor. (Typically offered: Spring and Summer)

**AGEC 50803. Basis Trading: Case Study. 3 Hours.**

This course provides an opportunity to apply principles learned in AGECE 43703 to grain merchandising using the case study approach. The course will involve in-class meetings supplemented with faculty-directed group-based learning experiences involving professional grain merchandisers. Group activities will follow the traditional case study method. Graduate degree credit will not be given for both AGECE 43803 and AGECE 50803. Prerequisite: AGECE 43703 or AGECE 50703. (Typically offered: Fall)

**AGEC 50903. Risk in Agricultural Production. 3 Hours.**

From its initial inception in the 1938 farm bill to debates centered on farm bills, the Federal Crop Insurance Program has experienced myriad changes from introduction of new covered crops and premium subsidy rates to the introduction of new products and insurable rate structures. Underpinning the FCIP is economic theory, statistics, and changes to the political landscape of U.S. agricultural policy. This course trains students in applying theory, statistics, and institutional knowledge to managing risk in agricultural production. Lecture 3 hours per week. Prerequisite: Graduate Standing (Typically offered: Fall)

**AGEC 51003. Agricultural Microeconomics. 3 Hours.**

Masters-level training in agricultural microeconomic theory and its application to food, agriculture and the environment. The course covers behavior of firms, households and markets, in more depth and rigor than encountered in undergraduate courses. Theories are explained and then applied to relevant food, agricultural, environment and resource issues. (Typically offered: Fall)

**AGEC 51103. Agricultural Prices and Forecasting. 3 Hours.**

Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis. Graduate degree credit will not be given for both AGECE 41103 and AGECE 51103. Prerequisite: Graduate Standing. (Typically offered: Spring)

**AGEC 51303. Agricultural and Environmental Resource Economics. 3 Hours.**

An economic approach to problems of evaluating private and social benefits and costs of altering the environment. Emphasis given to the interaction of individuals, institutions, and technology in problems of establishing and maintaining an acceptable level of environmental quality. Prerequisite: Minimum of 3 hours Agricultural Economics or Economics at 3000 level or higher or PhD standing. (Typically offered: Spring)

**AGEC 51403. Financial Management in Agriculture. 3 Hours.**

Covers advanced topics in agricultural finance. The general focus of the course is the financial management of non-corporate firms. Covers the basic tools of financial analysis including financial arithmetic, asset evaluation under risk, and financial analysis and planning using econometric models. Such topics covered include management of current assets, capital budgeting, capital structure, and institutions involved in agricultural finance. Prerequisite: Graduate standing. (Typically offered: Fall)

**AGEC 51503. The Economics of Public Policy. 3 Hours.**

This class will examine the impact of public policy on agricultural and other business sectors as well as households and individuals, particular in rural areas. Emphasis will also be placed on analyzing the potential impact of future policy changes. The course will focus on the application of welfare criteria and economic analyses to the problems and policies affecting resource adjustments in agriculture and rural communities. Prerequisite: Graduate standing. (Typically offered: Spring)

**AGEC 52003. Agribusiness Marketing Management. 3 Hours.**

Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Graduate degree credit will not be given for both AGEC 43003 and AGEC 52003. Prerequisite: Graduate Standing. (Typically offered: Fall and Summer)

**AGEC 52103. Agricultural Business Management. 3 Hours.**

The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Graduate degree credit will not be given for both AGEC 43103 and AGEC 52103. Prerequisite: (AGEC 21403 or ACCT 20103) and AGEC 23003 or equivalent. (Typically offered: Fall)

**AGEC 52203. International Agricultural Trade and Commercial Policy. 3 Hours.**

Analysis of agricultural market competition and performance in a global economy. The impact of domestic and international agricultural policies on domestic and international markets and welfare. Economic principles applied to the interaction of economic events in the world food economy. Graduate degree credit will not be given for both AGEC 46203 and AGEC 52203. Prerequisite: (AGEC 11003 or ECON 22003) and (AGEC 21003 or ECON 21003). (Typically offered: Spring)

**AGEC 52303. Political Economy of Agriculture and Food. 3 Hours.**

Agricultural and food policies are studied from domestic and international perspectives. Laws, regulations, decisions and actions by governments and other institutions are examined in terms of rationale, content, and consequences. Economic and political frameworks are used to assess policies in terms competitive structure, operation, and performance of farming and food systems. Graduate degree credit will not be given for both AGEC 46103 and AGEC 52303. Prerequisite: (AGEC 11003 or ECON 22003) and (AGEC 21003 or ECON 21003) and (PSYC 20003 or SOCI 10103 or HDFS 26003). (Typically offered: Fall)

**AGEC 53003. Agricultural Marketing Theory. 3 Hours.**

Survey of the structure of agricultural product and factor markets including a critique of theoretical analyses of industry structure, conduct and performance; and a review of market structure research in agricultural industries. Prerequisite: Graduate standing. (Typically offered: Fall)

**AGEC 54003. Quantitative Methods for Agribusiness. 3 Hours.**

Application of quantitative techniques used to support managerial decision-making and resource allocation in agricultural firms. Provides exposure to mathematical and statistical tools (regression analysis, mathematical programming, simulation) used in economic analysis in agriculture. Emphasis is placed on computer applications with conceptual linkage to economic theory. Prerequisite: Graduate standing. (Typically offered: Fall)

**AGEC 56003. Food Economics and Health. 3 Hours.**

This course provides an advanced overview of selected topics in food economics, food and nutrition policy and the interface between nutrition programs and health policy. Students will develop an understanding of economic and policy concepts of food, nutrition, and health. The course emphasizes analytical tools that can be applied to study issues in food, nutrition, and health facing the US and world populations. Prerequisite: Graduate standing. (Typically offered: Spring)

**AGEC 56103. Econometrics. 3 Hours.**

Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags and model specification. Prerequisite: MATH 22003 and knowledge of matrix methods, (which may be acquired as a corequisite), and (AGEC 11003 or ECON 22003) and (AGEC 24003 or MATH 21003 or BUSI 10303). (Typically offered: Spring)

**AGEC 56203. Quantitative Food and Agricultural Policy Analysis. 3 Hours.**

Introduction to applied analysis of domestic and international food and agricultural policies using quantitative tools. This course will provide hands-on experience with simulation modeling in microeconomics. An emphasis is placed on policy analysis through computer applications with theoretical underpinnings. Prerequisite: Graduate Standing. (Typically offered: Fall)

**AGEC 56403. Agricultural Data Science. 3 Hours.**

Agricultural and environmental data gathering, wrangling, analysis, and visualization with emphasis on applied programming, version control, and analytical skills. This course provides students foundational and applied skills in constructing diverse cross-sectional and panel data sets for econometric investigation. Students should expect to learn and demonstrate competency in programming for data gathering, wrangling, analysis, and visualization. The course will cover common data sources, descriptive analysis, and econometric techniques used in agricultural and production economics. Prerequisite: Graduate standing. (Typically offered: Spring)

**AGEC 57103. Food Safety Law. 3 Hours.**

This course provides students with an introduction to food law and policy, history of food regulation, the organization of federal food law and regulatory agencies, government inspection and enforcement powers, food safety standards, food labeling, food advertising and product liability. Web-based course. (Typically offered: Fall Odd Years)

**AGEC 6000V. Master's Thesis. 1-6 Hour.**

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

**AGEC 7000V. Doctoral Dissertation. 1-18 Hour.**

Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.