AEC—Agricultural Economics

Department of Agricultural Economics
College of Agriculture and Natural Resources

301  Mathematical Applications in Economics
Fall. 3(3-0) RB: MTH 124 or MTH 132 R: Open to graduate students. SA: EC 801 Mathematical tools in economic analysis. Matrix algebra, derivatives, partial derivatives, optimization, integration, and linear differential equations.

805  Microeconomic Analysis
Fall, Spring. 3(3-0) RB: AEC 801 or concurrently R: Open to graduate students. SA: EC 805 Microeconomic theory with calculus. Production, costs, demand, markets, general equilibrium, and welfare theory.

810  Institutional and Behavioral Economics
Fall. 3(3-0) Interdepartmental with Economics. Administered by Agricultural Economics. RB: EC 301 Relationships among institutions, individual and collective actions, and economic performance. Public choice, property rights, and behavioral theories of firms and bureaucracies.

817  Political Economy of Agricultural and Trade Policy
Spring. 3(3-0) RB: (EC 805 or EC 812A) and (EC 809 or EC 813A) Concepts of policy analysis and decision. Agricultural sector problems, behavior, and policy in the development process. Macroeconomic and trade impacts. International policies affecting trade and development. Current policy issues.

821A  Cross Section and Panel Data Econometrics I
Fall. 3(3-0) Interdepartmental with Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 820B SA: EC 821 Analyses of systems of equations, panel data models, instrumental variables and generalized method of moments, M-estimation, quantile regression, maximum likelihood estimation, binary and multinomial response models, Tobit and two-part models, and other selected topics.

821B  Cross Section and Panel Data Econometrics II
Spring. 3(3-0) Interdepartmental with Economics and Finance and Statistics and Probability. Administered by Economics. Analyses of quasi-maximum likelihood estimation, count data models, fractional response models, duration models, sample selection and attrition, stratified sampling, estimating treatment effects, stochastic frontier models, and other advanced topics.

822A  Time Series Econometrics I

822B  Time Series Econometrics II
Spring. 3(3-0) Interdepartmental with Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 822A Analyses of multivariate time series, time series volatility models, long memory, nonlinear time series models, and other advanced topics.

829  The Economics of Environmental Resources
Spring. 3(3-0) Interdepartmental with Community, Agriculture, Recreation and Resource Studies and Economics and Forestry and Fisheries and Wildlife. Administered by Agricultural Economics. Economic principles related to environmental conflicts and public policy alternatives. Applications to water quality, land use, fish and wildlife, conservation, development, and global environmental issues.

835  Introductory Econometrics
Spring. 3(3-0) RB: STT 430 Estimation and interpretation of multiple regression models and their modifications when usual assumptions are not valid. Applications focus on problems faced by agricultural economists.

841  Analysis of Food System Organization and Performance
Spring. 3(3-0) Industrial organization, subsector, and transaction cost approaches to analyzing coordination and performance of agricultural markets, contracting, and integration in the food systems of industrialized and developing countries. Applications to issues of organization, control, and public policy.

845  Commodity Market Analysis

851  Agribusiness Operations Management
Spring. 3(3-0) Managerial processes for agribusiness operations control. Applications of linear programming. Budgets, simulations, and dynamic programming. Statistical process control. Predictive and prescriptive analysis.

853  Financial Management in Agriculture
Spring. 3(3-0) Financial and investment analysis tools and concepts and their application to decisions faced by agricultural, agribusiness, and food industry firms. Financial institutions and instruments, credit programs, and financial sector performance in low-income and high-income countries.

855  Agricultural Production Economics
Fall. 3(3-0) RB: (EC 801 and EC 805) and (AEC 835 and EC 823) Analysis of production models using econometrics, mathematical programming, and simulation. Systems science perspective.

857  Strategic Management in Agribusiness
Fall. 3(3-0) SA: AEC 891A Managerial problems faced by agribusiness firms. Strategies to interpret and respond to forces affecting the industry. Case study approach.

861  Agriculture in Economic Development
Fall. 3(3-0) Role of agriculture in economic development of low- and middle-income countries. Theories of agricultural growth. Policy issues. Case studies.

865  Agricultural Benefit-Cost Analysis
Spring. 3(3-0) Benefit-cost analysis of agricultural and natural resource projects, including financial and economic analysis. Case studies in project design and appraisal in low and high income countries.

874  Field Data Collection and Analysis in Developing Countries
Summer of odd years. 3(3-0) SA: AEC 861 Technology and conducting socioeconomic surveys to inform agricultural production, marketing, and environmental natural resource issues in developed and developing countries. Research proposal preparation, questionnaire design, sampling, data collection, and data processing and analysis using computers.

885  Leadership in Natural Resources and Environmental Management
Fall of even years. 3(3-0) Interdepartmental with Forestry and Fisheries and Wildlife. Administration. Concepts and practice of leadership in natural resource and environmental management. Integration across disciplinary and jurisdictional divisions.

890  Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to graduate students in the Department of Agricultural Economics. Approval of department. Independent study of selected topics in agricultural economics.

891  Topics in Agricultural Economics
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. Selected topics in analytical methods, agri-food systems economics and management, and agricultural and natural resource development and policy.

898  Master's Research
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to master's students in the Agricultural Economics major. Approval of department. Master's degree Plan B research.

899  Master's Thesis Research
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to master's students in the Agricultural Economics major. Approval of department. Master's thesis research.

Economic theory of managing nonrenewable and renewable resources, including optimal use, the incentives for use under decentralized markets, and public policy design. Analysis of the co-evolution of economic and ecological systems.

Methods of dynamic optimization and their application to agricultural and natural resources problems. Discrete time dynamic programming, calculus of variations, and discrete time maximum principle.

Applications to issues in agriculture, agribusiness, the food system, natural resources, and the environment. Asymmetric information, incomplete markets, principal/agent issues, transaction costs, and the design of contracts and other institutions.

Matching appropriate tools to applied problems in agricultural and resource economics. Individual and team preparation, under tight deadlines, of professional analyses and oral presentations for diverse audiences. Use of peer review.

Advanced topics such as price analysis, finance, risk and modeling techniques, agri-food systems, environmental economics and management, and agricultural and natural resource development and policy.