Courses in the Department of Agricultural, Food, and Resource Economics

Spring 900A Applied Microeconomics I
Fall. 3 credits. P: (AFRE 805 or EC 812A) and (AFRE 835 or EC 820A) SA: AEC 900A
Empirical analysis of microeconomic problems with emphasis on applications to agriculture, natural resources, and the food sector.

Fall 900B Applied Microeconomics II
Spring. 3 credits. P: AFRE 900A SA: AEC 900B
Extended empirical analysis of microeconomic problems with emphasis on applications to agriculture, natural resources, and the food sector.

Fall 923 Advanced Environmental and Resource Economics
Fall. 3(3-0) Interdepartmental with Economics and Forestry. Administered by Agricultural, Food, and Resource Economics. RB: (AFRE 829 or concurrently) and EC 812A SA: AEC 923
Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.

Spring 925 Advanced Natural Resource Economics
Spring. 3(3-0) Interdepartmental with Economics. Administered by Agricultural, Food, and Resource Economics. RB: EC 812A and AFRE 829 SA: AEC 991H, AEC 925
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.

Spring 829 Economics of Environmental Resources
Spring. 3(3-0) Interdepartmental with Community Sustainability and Economics and Forestry and Fisheries and Wildlife. Administered by Agricultural, Food, and Resource Economics. RB: Undergraduate intermediate microeconomics, calculus, and statistics SA: AEC 829
Economic principles, theoretical models, and empirical methods related to environmental problems and policy interventions. Applications to air, land, water, forests, energy, fish and wildlife, and climate change, including in developing countries.

Spring 841 Analysis of Food System Organization and Performance
Spring. 3(3-0) SA: AEC 841
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.

Spring 851 Agribusiness Operations Management
Spring. 3(3-0) SA: AEC 851

Spring 853 Financial Management in Agriculture
Spring. 3(3-0) SA: AEC 853
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.

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

Fall 861 Agriculture in Economic Development
Fall. 3(3-0) SA: AEC 861

Spring 865 Agricultural Benefit-Cost Analysis
Fall. 3(3-0) SA: AEC 865
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.

Spring 874 Empirical Methods for Field Research in Developing Countries
Spring. 3(3-0) RB: AFRE 861 and AFRE 835 SA: AEC 874, AEC 891C
Research design, sampling, questionnaire design, data collection and analysis of multi-topic household surveys for international development issues.

Spring 900B Applied Microeconomics II
Spring. 3(0-1-0) SA: AEC 900B
Extended empirical analysis of microeconomic problems with emphasis on applications to agriculture, natural resources, and the food sector.

Spring 900A Applied Microeconomics I
Fall. 3 credits. P: AFRE 805 or EC 812A and (AFRE 835 or EC 820A) SA: AEC 900A
Empirical analysis of microeconomic problems with emphasis on applications to agriculture, natural resources, and the food sector.

Spring 823 Environmental Economics Methods
Fall of odd years. 3 credits. P: AFRE 805 and AFRE 835 SA: AEC 823
Empirical and econometric methods in environmental economics focusing on theory and application of nonmarket valuation techniques.

Spring 817 Political Economy of Agricultural and Trade Policy
Spring. 3(3-0) RB: AFRE 805 or EC 812A SA: AEC 817

Spring 821B Cross Section and Panel Data Econometrics II
Spring. 3(3-0) Interdepartmental with Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 821A
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.

Spring 801 Mathematical Applications in Economics
Fall. 3(3-0) RB: MTH 124 or MTH 132 R: Open to graduate students. SA: AEC 801, EC 801

Fall 802 Statistical Methods for Agricultural, Food, and Resource Economics
Fall. 3 credits. SA: AEC 802 C: AFRE 801 concurrently.
Applications of statistical tools for economic analysis.

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

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

Fall 811C Animal Production Economics
Fall. 3(3-0) SA: AEC 811C
Econometric methods for animal production economics focusing on theory and application of nonmarket valuation techniques.

Fall 820A Econometrics
Fall. 3(3-0) SA: AEC 820A
Econometric methods for agricultural economics focusing on theory and application of nonmarket valuation techniques.

Fall 820B Econometrics
Fall. 3(3-0) Interdepartmental with Economics. Administered by Economics. P: EC 821A
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.

Fall 829 Economics of Environmental Resources
Spring. 3(3-0) Interdepartmental with Community Sustainability and Economics and Forestry and Fisheries and Wildlife. Administered by Agricultural, Food, and Resource Economics. RB: Undergraduate intermediate microeconomics, calculus, and statistics SA: AEC 829
Economic principles, theoretical models, and empirical methods related to environmental problems and policy interventions. Applications to air, land, water, forests, energy, fish and wildlife, and climate change, including in developing countries.

Fall 841 Analysis of Food System Organization and Performance
Spring. 3(3-0) SA: AEC 841
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.

Fall 851 Agribusiness Operations Management
Spring. 3(3-0) SA: AEC 851

Fall 853 Financial Management in Agriculture
Spring. 3(3-0) SA: AEC 853
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.

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

Fall 861 Agriculture in Economic Development
Fall. 3(3-0) SA: AEC 861

Fall 865 Agricultural Benefit-Cost Analysis
Fall. 3(3-0) SA: AEC 865
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.

Fall 874 Empirical Methods for Field Research in Developing Countries
Spring. 3(3-0) RB: AFRE 861 and AFRE 835 SA: AEC 874, AEC 891C
Research design, sampling, questionnaire design, data collection and analysis of multi-topic household surveys for international development issues.
930  **Dynamic Analysis in Agriculture and Natural Resources**  
Spring. 3(3-0) RB: AFRE 801 and EC 812A  
R: Open to doctoral students in the College of Agriculture and Natural Resources or in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the College of Social Science or approval of department. SA: AEC 991E, AEC 930  
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.

932  **Information Economics and Institutions in Agriculture and Natural Resources**  
Fall. 3(3-0) RB: (AFRE 810 or AFRE 841) and (EC 812A and EC 812B) R: Open to doctoral students in the College of Agriculture and Natural Resources or in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the College of Social Science. SA: AEC 932  
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.

961  **Advanced Agricultural Development Economics**  
Spring. 3 credits. P: EC 812A and EC 812B and EC 820A and EC 820B RB: AFRE 861  
SA: AEC 961  
Theoretical and empirical models of microeconomics of international agricultural development, with emphasis on household and individual behaviors related to production, investment and marketing decisions.

991  **Advanced Topics in Agricultural, Food, and Resource Economics**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to doctoral students in the College of Agriculture and Natural Resources or in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the College of Social Science. SA: AEC 991  
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.

999  **Doctoral Dissertation Research**  
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open to doctoral students in the Department of Agricultural, Food, and Resource Economics or in the Agricultural, Food and Resource Economics Major. Approval of department. SA: AEC 999  
Doctoral dissertation research.