Agricultural, Food, and Resource Economics

AFRE—Agricultural, Food, and Resource Economics

Department of Agricultural, Food, and Resource Economics
College of Agriculture and Natural Resources

Mathematical Applications in Economics
Fall, 3 credits. SA: AEC 802

Economics of Environmental Resources
Spring, 3 credits. FS: 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.

Introduction to Econometrics
Spring, 3 credits. SA: AEC 835

Estimation and interpretation of multiple regression models and their modifications when usual assumptions are not valid. Applications focus on problems faced by agricultural economists.

Analysis of Food System Organization and Performance
Spring, 3 credits. 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.

Agribusiness Operations Management
Spring, 3 credits. SA: AEC 851


Financial Management in Agriculture
Spring, 3 credits. 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.

Strategic Management in Agribusiness
Fall, 3 credits. SA: AEC 857, AEC 891

Managerial problems faced by agribusiness firms. Strategies to interpret and respond to forces affecting the industry. Case study approach.

Agriculture in Economic Development
Fall, 3 credits. SA: AEC 861

Theories and role of agriculture in economic development. Effects of policies, institutions, organizations, and technologies.

Agricultural Benefit-Cost Analysis
Fall, 3 credits. 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.

Empirical Methods for Field Research in Developing Countries
Spring, 3 credits. SA: AEC 861 and AEC 835

Research design, sampling, questionnaire design, data collection and analysis of multi-topic household surveys for international development issues.

Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to graduate students in the Department of Agricultural, Food, and Resource Economics. Approval of department. SA: AEC 890

Independent study of selected topics in agricultural, food, and resource economics.

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. SA: AEC 891

Selected topics in analytical methods, agri-food systems economics and management, and agricultural and natural resource development and policy.

Master's Research
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open to master's students in the Department of Agricultural, Food, and Resource Economics. Approval of department. SA: AEC 898

Master's thesis research.

Applied Microeconomics I
Fall, 3 credits. P: (AFRE 805 or EC 812A) and (AFRE 835 or EC 820A) SA: AEC 900

Empirical analysis of microeconomic problems with emphasis on applications to agriculture, natural resources, and the food sector.

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.

Advanced Environmental and Resource Economics
Fall, 3 credits. 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.

Advanced Natural Resource Economics
Spring, 3 credits. SA: AEC 925

Economics 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.
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.