

AGRICULTURAL & RESOURCE ECON (ARE)

College of Agricultural & Environmental Sciences

ARE 001 – Economic Basis of the Agricultural Industry (4 units)

Course Description: Agriculture and man; the agricultural industry in U.S. and world economies; production and supply, marketing and demand; agricultural land, capital and labor markets; economic and social problems of agriculture in an urban and industrialized economy emphasizing California. Not currently offered.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 001S – Economic Basis of the Agricultural Industry (4 units)

Course Description: Agriculture and man; the agricultural industry in Australia and world economies; production and supply, marketing and demand; agricultural land, capital and labor markets; economic and social problems of agriculture in an urban and industrialized economy emphasizing Australia. May be taught abroad in Australia under the supervision of a UC Davis faculty member. Not currently offered.

Learning Activities: Lecture 4 hour(s).

Credit Limitation(s): Not open for credit to students who have taken ARE 001.

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC).

ARE 015 – Population, Environment & World Agriculture (4 units)

Course Description: Economic analysis of interactions among population, environment, natural resources and development of world agriculture. Introduces students to economic thinking about population growth, its causes and consequences for world food demand, and environmental and technological limits to increasing food supplies. Not currently offered.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC); Writing Experience (WE).

ARE 018 – Business Law (4 units)

Course Description: General principles of business law in the areas of contracts, business organization, real property, uniform commercial code, sales, commercial paper, employment relations, and creditor-debtor against a background of the history and functioning of our present legal system.

Prerequisite(s): Sophomore standing.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 098 – Directed Group Study (1-5 units)

Course Description: Directed group study.

Prerequisite(s): Consent of instructor.

Learning Activities: Variable.

Enrollment Restriction(s): Restricted to lower division students.

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 099 – Special Study for Undergraduates (1-5 units)

Course Description: Special study for undergraduates.

Prerequisite(s): Consent of instructor.

Learning Activities: .

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 100A – Intermediate Microeconomics: Theory of Production & Consumption (4 units)

Course Description: Theory of individual consumer and market demand; theory of production and supply of agricultural products, with particular reference to the individual firm; price determination, and employment of resources under pure competition.

Prerequisite(s): ((ECN 001A C- or better or ECN 001AY C- or better) or ECN 001AV C- or better); (ECN 001B C- or better or ECN 001BV C- or better); ((MAT 016A C- or better, MAT 016B C- or better, MAT 016C C- or better) or (MAT 017A C- or better, MAT 017B C- or better) or (MAT 021A C- or better, MAT 021B C- or better)).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science and Management (AANM), and Textiles and Clothing (ATXC) Majors and Agricultural and Resource Economics (GARE), International Agricultural Development (GIAD), Viticulture and Enology (GVEN) and Transportation Technology and Policy (GTTP) Graduate Majors.

Credit Limitation(s): Not open for credit to students who have completed ECN 100.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

ARE 100B – Intermediate Microeconomics: Imperfect Competition, Markets & Welfare Economics (4 units)

Course Description: Price determination, and employment of resources under conditions of monopoly, oligopoly, and monopolistic competition.

Prerequisite(s): ARE 100A C- or better; ((ECN 001A C- or better or ECN 001AY C- or better or ECN 001AV C- or better); ECN 001B C- or better or ECN 001BV C- or better); ((MAT 016A C- or better, MAT 016B C- or better, MAT 016C C- or better) or (MAT 017A C- or better, MAT 017B C- or better) or (MAT 021A C- or better, MAT 021B C- or better)); ARE 018 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics Majors (AMGE) and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

ARE 106 – Econometric Theory & Applications (4 units)

This version has ended; see updated course, below.

Course Description: Statistical methods for analyzing data to solve problems in managerial economics. Topics include the linear regression model, methods to resolve data problems, and the economic interpretation of results.

Prerequisite(s): ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better; (PLS 021 C- or better or PLS 021V C- or better or ECS 032A C- or better).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics Majors (AMGE) and Agricultural & Resource Economics (GARE) Graduate Majors.

Credit Limitation(s): Not open for credit to students who have enrolled in or completed ECN 140.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

ARE 106 – Econometric Theory & Applications (4 units)

Course Description: Statistical methods for analyzing data to solve problems in managerial economics. Topics include the linear regression model, methods to resolve data problems, and the economic interpretation of results.

Prerequisite(s): ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics Majors (AMGE) and Agricultural & Resource Economics (GARE) Graduate Majors.

Credit Limitation(s): Not open for credit to students who have enrolled in or completed ECN 140.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

This course version is effective from, and including: Winter Quarter 2024.

ARE 107 – Econometrics for Business Decisions (4 units)

Course Description: Covers state-of-the art econometric and statistical methods for causal and predictive modeling with applications to finance and marketing.

Prerequisite(s): ARE 100A C- or better; ARE 106 C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics majors; Pass Two open to majors in the College of Agricultural & Environmental Sciences.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 112 – Fundamentals of Organization Management (4 units)

Course Description: Role of organizational design and behavior in business and public agencies. Principles of planning, decision making, individual behavior, management, leadership, informal groups, conflict and change in the organization. May be taught abroad.

Prerequisite(s): Upper division standing recommended.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One restricted to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 113 – Fundamentals of Marketing Management (4 units)

Course Description: Nature of product marketing by the business firm. Customer-product relationships, pricing and demand; new product development and marketing strategy; promotion and advertising; product life cycles; the distribution system; manufacturing, wholesaling, retailing. Government regulation and restraints.

Prerequisite(s): ECN 001A or ECN 001AY or ECN 001AV. For non-majors only.

Learning Activities: Lecture 4 hour(s).

Credit Limitation(s): Not open for credit to students who have completed ARE 136.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 115A – Economic Development (4 units)

Course Description: Major issues encountered in emerging from international poverty, problems of growth and structural change, human welfare, population growth and health, labor markets and internal migration. Important issues of policy concerning international trade and industrialization.

Prerequisite(s): (ECN 001A or ECN 001AY or ECN 001AV); (ECN 001B or ECN 001BV).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 115A.

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC).

ARE 115B – Economic Development (4 units)

Course Description: Macroeconomic issues of developing countries. Issues include problems in generating capital, conduct of monetary and fiscal policies, foreign aid and investment. Important issues of policy concerning international borrowing and external debt of developing countries.

Prerequisite(s): (ECN 001A or ECN 001AY or ECN 001AV); (ECN 001B or ECN 001BV).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 115B.

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC).

ARE 115BY – Economic Development (4 units)

Course Description: Macroeconomic issues of developing countries. Problems in generating capital, conduct of monetary and fiscal policies, foreign aid and investment. Issues of policy concerning international borrowing and external debt of developing countries.

Prerequisite(s): (ECN 001A or ECN 001AY or ECN 001AV); (ECN 001B or ECN 001BV).

Learning Activities: Lecture 1.50 hour(s), Web Virtual Lecture 1.50 hour(s), Term Paper.

Enrollment Restriction(s): Pass One open to Economics, Managerial Economics, and International Relations Majors.

Cross Listing: ECN 115BY.

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC).

ARE 118 – Tax Accounting (4 units)

Course Description: Development and application of a framework to understand the tax effects of typical management decisions on both entities and their owners. Impacts that different methods of taxation have on business entities with emphasis on tax planning, using income and deduction strategies, retirement plans, and choice of business entity for tax minimization. Irregularly offered.

Prerequisite(s): MGT 011A C- or better; MGT 011B C- or better; ARE 018 recommended.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 119 – Intermediate Managerial Accounting (4 units)

Course Description: Use of accounting information by managers in decision making, planning, directing and controlling operations. Focuses on managerial/cost accounting theory and practice. Covers costing systems, budgeting, and financial statement analysis.

Prerequisite(s): MGT 011A C- or better; MGT 011B C- or better.

Learning Activities: Lecture 4 hour(s), Extensive Problem Solving 8 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 120 – Agricultural Policy (4 units)

Course Description: Analytical treatment of historical and current economic problems and governmental policies influencing American agriculture. Uses of economic theory to develop historical and conceptual understanding of the economics of agriculture; how public policy influences the nature and performance of American agriculture.

Prerequisite(s): ARE 100A C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 120S – Agricultural Policy (4 units)

Course Description: Analytical treatment of historical and current economic problems and governmental policies influencing agriculture. Uses of economic theory to develop historical and conceptual understanding of the economics of agriculture; how public policy influences the nature and performance of agriculture. May be taught abroad in Australia under the supervision of a UC Davis faculty member. Not currently offered.

Prerequisite(s): ARE 100A; or consent of instructor.

Learning Activities: Lecture 4 hour(s).

Credit Limitation(s): Not open for credit to students who have taken ARE 120.

Grade Mode: Letter.

General Education: Social Sciences (SS); World Cultures (WC).

ARE 121 – Economics of Agricultural Sustainability (4 units)

Course Description: Application of economic concepts to agro-environmental issues relevant to agricultural sustainability. Topics include market efficiency, production externalities, government policies, agricultural trade, product differentiation, all linked to sustainability issues. Case studies include biofuels, genetically modified foods and geographically differentiated products.

Prerequisite(s): ECN 001A C- or better or ECN 001AY C- or better. or ECN 001AV C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Majors in the College of Agricultural & Environmental Sciences and Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 130 – Agricultural Markets (4 units)

Course Description: Nature, function, organizational structure, and operation of agricultural markets; prices, costs, and margins; market information, regulation, and controls; cooperative marketing. Irregularly offered.

Prerequisite(s): ARE 106 C- or better; ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 132 – Cooperative Business Enterprises (4 units)

Course Description: Study of cooperative business enterprise in the United States and elsewhere; economic theories of behavior, principles of operation, finance, decision-making, and taxation.

Prerequisite(s): ECN 001A C- or better or ECN 001AY C- or better or ECN 001AV C- or better.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) and Animal Science & Management Majors (AANM) and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 133 – Introduction to Behavioral Economics (4 units)

Course Description: Inclusion of non-economic factors such as psychological principles in economic decisions and model predictions. Emphasis on behavioral principles, resulting strategies and implications for diverse market settings.

Prerequisite(s): (ECN 001A C- or better or ECN 001AY C- or better or ECN 001AV C- or better); (STA 013 C- or better or STA 013Y C- or better).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics majors.

Grade Mode: Letter.

ARE 135 – Agribusiness Marketing Plan Development (2 units)

Course Description: Fundamental components required to develop a marketing plan. Appreciation of the concept of marketing plans, appropriate research required, including the use of library, Internet, survey and interview instruments, government documents, market analysis, business proposition, action planning, financial evaluation and monitoring.

Prerequisite(s): Upper division standing.

Learning Activities: Lecture/Discussion 2 hour(s).

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 136 – Managerial Marketing (4 units)

Course Description: Application of economic theory and econometrics to the study of marketing and consumer research. Emphasis on industry structure, history, regulatory aspects, integrated brand promotion, market segmentation, optimal product mix, message placement.

Prerequisite(s): ARE 100B C- or better; ARE 106 C- or better; ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 138 – International Commodity & Resource Markets (4 units)

Course Description: Basic nature and scope of international trade in agricultural commodities, agricultural inputs, and natural resources. Market dimensions and policy institutions. Case studies to illustrate import and export problems associated with different regions and commodities.

Prerequisite(s): ARE 100A C- or better; ARE 100B C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 139 – Futures & Options Markets (4 units)

Course Description: History, mechanics, and economic functions of futures and options markets; hedging; theory of inter-temporal price formation and behavior of futures and options prices; price forecasting; futures and options as policy tools.

Prerequisite(s): ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 140 – Farm Management (4 units)

Course Description: Farm organization and resources; economic and technological principles in decision making; analytical techniques and management control; problems in organizing and managing the farm business. Irregularly offered.

Prerequisite(s): ECN 001A C- or better or ECN 001AY C- or better or ECN 001AV C- or better.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 142 – Personal Finance (3 units)

Course Description: Management of income and expenditures by the household. Use of consumer credit, savings, and insurance by households. Principles of tax, retirement, and estate planning.

Prerequisite(s): ECN 001B or ECN 001BV.

Learning Activities: Lecture 3 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 143 – Investments (4 units)

Course Description: Survey of investment institutions, sources of investment information, and portfolio theory. Analysis of the stock, bond and real estate markets from the perspective of the investor.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to upper division Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Credit Limitation(s): Not open for credit to students concurrently enrolled in or have completed ARE 171 or ARE 171A.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 144 – Real Estate Economics (4 units)

Course Description: Economic theory, analysis, and institutions of real estate markets and related financial markets. Techniques for appraising property values. Cases drawn from the raw land, single family, multifamily, industrial and office real estate markets.

Prerequisite(s): ARE 100A C- or better.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 145 – Farm & Rural Resources Appraisal (4 units)

Course Description: Principles and procedures of the valuation process with emphasis placed on rural real estate. Includes identification of the major physical and economic determinants of value, the three primary appraisal approaches to valuation, discussion of appraisal activity and practice.

Learning Activities: Lecture/Discussion 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 146 – Business, Government Regulation, & Society (4 units)

Course Description: Variety, nature and impact of government regulation: anti-trust laws and economic and social regulation. Nature of the legislative process, promulgation of regulations, and their impact, especially as analyzed by economists.

Prerequisite(s): ARE 100A C- or better; ARE 100B C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS); American Cultures, Governance, & History (ACGH).

ARE 147 – Resource & Environment Policy Analysis (3 units)

Course Description: Natural resource use problems with emphasis on past and current policies and institutions affecting resource use; determinants, principles, and patterns of natural resource use; property rights; conservation; private and public resource use problems; and public issues. Not currently offered.

Prerequisite(s): ECN 001A or ECN 001AY or ECN 001AV.

Learning Activities: Lecture 3 hour(s).

Enrollment Restriction(s): Open to non-majors only.

Credit Limitation(s): Students who have had or are taking ARE 100A, ECN 100, or the equivalent, may receive only 2 units of credit, so must enroll in ARE 147M instead.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 147M – Resource & Environmental Policy Analysis (2 units)

Course Description: Natural resource use problems with emphasis on past and current policies and institutions affecting resource use; determinants, principles, and patterns of natural resource use; property rights; conservation; private and public resource use problems; and public issues. Not currently offered.

Prerequisite(s): ECN 001A or ECN 001AY or ECN 001AV.

Learning Activities: Lecture 3 hour(s).

Enrollment Restriction(s): Open to non-majors only.

Credit Limitation(s): Students who have had or are taking ARE 100A, ECN 100, or the equivalent, must enroll in this course for 2 units rather than ARE 147.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 150 – Agricultural Labor (4 units)

Course Description: Analysis of labor markets with focus on U.S. and world agriculture. Labor supply, demand, market equilibrium; why farm labor markets are different; global trends in farm labor; U.S. farm labor history; unions and collective bargaining; immigration policy.

Prerequisite(s): ARE 100A C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural and Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 155 – Operations Research & Management Science (4 units)

Course Description: Introduction to quantitative methods used to analyze business and economic processes: decision analysis for management, mathematical programming, competitive analysis, and other methods.

Prerequisite(s): ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) and Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

ARE 156 – Introduction to Mathematical Economics (4 units)

Course Description: Linear algebra for economists; necessary and sufficient conditions in static optimization problems; implicit function theorem; economic methodology and mathematics; comparative statics; envelope theorem; Le Chatelier principle; applications to production and consumer models. Not currently offered.

Prerequisite(s): ARE 100B; ARE 155; ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL).

ARE 157 – Analysis for Operations & Production Management (4 units)

Course Description: Application of economic theory and quantitative methods to analyze operations and production management problems including process strategy, quality management, location and plant layout, and inventory management.

Prerequisite(s): ARE 155 C- or better; ARE 100A C- or better; (STA 013 C- or better or STA 013Y C- or better); STA 103 C- or better.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE), Animal Science & Management (AANM) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 165 – Emerging Economies & Globalization (4 units)

Course Description: Economic drivers and policy challenges in the major emerging markets, with an emphasis on the effects of rising incomes, population growth, urbanization, and relative wages on world markets and natural resources. Not currently offered.

Prerequisite(s): ARE 100A C- or better; ARE 115A; ARE 115B; completion of ARE 106 ECN 162 strongly recommended.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics and graduate majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 166 – Economics of Global Poverty Reduction: What Works & Why (4 units)

Course Description: Application of microeconomic theory and econometrics to understand causes of poverty and critically evaluate poverty alleviation policies in low income countries. Irregularly offered.

Prerequisite(s): (ARE 100B C- or better or ECN 100B C- or better); (ARE 106 C- or better or ECN 140 C- or better); (ARE 115A C- or better or ECN 115A C- or better).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) and Economics (LECN) majors only.

Grade Mode: Letter.

ARE 171 – Principles of Finance (4 units)

Course Description: Principles of corporate financial management. Time value of money, interest rates, principles of valuation, NPV, risk and return, and cost of capital.

Prerequisite(s): ARE 100A C- or better; ARE 106 C- or better; MGT 011A C- or better; MGT 011B C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics Majors and Agricultural & Resource Economics Graduate Majors.

Credit Limitation(s): Not open for credit to students who have completed ECN 134.

Grade Mode: Letter.

ARE 172 – Financial Management of the Firm (4 units)

Course Description: Financial analysis at the firm level: optimizing capital structure; minimizing the cost of capital; dividend policies; mergers and acquisitions; real options; and risk management.

Prerequisite(s): ARE 171 C- or better; ARE 106 C- or better; ARE 100A C- or better; MGT 011A C- or better; MGT 011B C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics Majors and Agricultural & Resource Economics Graduate Majors.

Grade Mode: Letter.

ARE 173 – Capital Markets (4 units)

Course Description: Introduction to asset pricing. Valuation and risk characteristics of financial assets, including stocks, bonds, futures, and options. Investors' attitudes toward risk, capital allocation, portfolio selection, the capital asset pricing model, and the efficient market hypothesis.

Prerequisite(s): ARE 171 C- or better; ARE 106 C- or better; ARE 100A C- or better; MGT 011A C- or better; MGT 011B C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics majors and Agricultural & Resource Economics Graduate Majors.

Grade Mode: Letter.

ARE 175 – Natural Resource Economics (4 units)

Course Description: Economic concepts and policy issues associated with natural resources, renewable resources (ground water, forests, fisheries, and wildlife populations) and non-renewable resources (minerals and energy resources, soil).

Prerequisite(s): ARE 100A C- or better or ECN 100A C- or better or ECN 100 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) and Environmental Policy Analysis & Planning (AEPP) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Cross Listing: ESP 175.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 176 – Environmental Economics (4 units)

Course Description: Role of the environment in economic activity and methods for protecting and enhancing environmental quality; implications of market failures for public policy; design of environmental policy; theory of welfare measurement; measuring the benefits of environmental improvement.

Prerequisite(s): ARE 100A C- or better or ECN 100A C- or better or ECN 100 C- or better.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Enrollment Restriction(s): Pass One open to Managerial Economics (AMGE) Majors and Agricultural & Resource Economics (GARE) Graduate Majors.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 190 – Topics in Managerial Economics (3 units)

Course Description: Selected topics in managerial economics, focusing on current research.

Prerequisite(s): ARE 100A; STA 103; and consent of instructor.

Learning Activities: Lecture 3 hour(s).

Repeat Credit: May be repeated 4 time(s) when the topic differs.

Grade Mode: Letter.

General Education: Social Sciences (SS).

ARE 192 – Internship (1-6 units)

Course Description: Internship experience off and on campus in all subject areas offered in the Department of Agricultural & Resource Economics. Internships are supervised by a member of the staff.

Learning Activities: Internship 3-18 hour(s).

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 194HA – Special Study for Honors Students (4 units)

Course Description: A program of research culminating in the writing of a senior honors thesis under the direction of a faculty advisor.

Prerequisite(s): ARE 100B; ARE 106; ARE 155 (can be concurrent); and consent of instructor; minimum GPA of 3.500; major in Agricultural Managerial Economics or Managerial Economics; senior standing.

Learning Activities: Independent Study 3 hour(s), Seminar 1 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL);

Writing Experience (WE).

ARE 194HB – Special Study for Honors Students (4 units)

Course Description: A program of research culminating in the writing of a senior honors thesis under the direction of a faculty advisor.

Prerequisite(s): ARE 100B; ARE 106; ARE 155 (can be concurrent); minimum GPA of 3.500; major in Agricultural Managerial Economics or Managerial Economics; senior standing.

Learning Activities: Independent Study 3 hour(s), Seminar 1 hour(s).

Grade Mode: Letter.

General Education: Social Sciences (SS); Quantitative Literacy (QL); Writing Experience (WE).

ARE 197T – Tutoring in Managerial Economics (1-3 units)

Course Description: Undergraduates assist the instructor by tutoring students in one of the department's regularly scheduled courses.

Prerequisite(s): Senior standing in Managerial Economics and consent of Department Chairperson.

Learning Activities: Variable.

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 198 – Directed Group Study (1-5 units)

Course Description: Directed group study. May be taught abroad.

Prerequisite(s): Consent of instructor.

Learning Activities: Variable.

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 199 – Special Study for Advanced Undergraduates (1-5 units)

Course Description: Special study for advanced undergraduates.

Prerequisite(s): Consent of instructor.

Learning Activities: Variable.

Grade Mode: Pass/No Pass only.

General Education: Social Sciences (SS).

ARE 200A – Microeconomic Theory (4 units)

Course Description: Linear and non-linear optimization theory applied to develop the theory of the profit-maximizing firm and the utility-maximizing consumer.

Prerequisite(s): Graduate standing.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 200A.

Grade Mode: Letter.

ARE 200B – Microeconomic Theory (4 units)

Course Description: Characteristics of market equilibrium under perfect competition, simple monopoly and monopsony. Emphasis on general equilibrium and welfare economics; the sources of market success and market failure.

Prerequisite(s): ARE 200A.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 200B.

Grade Mode: Letter.

ARE 200C – Microeconomic Theory (4 units)

Course Description: Uncertainty and information economics. Individual decision making under uncertainty. Introduction to game theory, with emphasis on applications to markets with firms that are imperfect competitors or consumers that are imperfectly informed.

Prerequisite(s): ARE 200B.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 200C.

Grade Mode: Letter.

ARE 202A – Introduction to Applied Research Methods (4 units)

Course Description: Study of philosophy and methodology of applied research in agricultural economics. Methods of conceptualization of researchable topics. Method of communication and constructive criticism.

Prerequisite(s): ARE 204A; ARE 200A (can be concurrent); ARE 256A.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 202B – Applied Microeconomics: Consumer & Producer Behavior (4 units)

Course Description: Application of consumer and producer theory in models of individual behavior and market-level phenomena. Implications of consumer and producer theory for specification of empirical models of supply and demand for inputs and outputs and market equilibrium displacement models.

Prerequisite(s): ARE 200A; ARE 200B (can be concurrent); ARE 202A.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 202C – Research Design for Applied Microeconomics (4 units)

Course Description: Third of three courses in the Ph.D. level applied microeconomics sequence. Examines the design of empirical research and the application of econometric theory.

Prerequisite(s): ARE 202B; ARE 240A.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 204A – Microeconomic Analysis I (4 units)

Course Description: Behavior of consumers and producers and their interactions; tools and methods needed to analyze economic behavior in the marketplace. Application of those methods to real-world problems.

Prerequisite(s): ARE 100B or ECN 100; advanced undergraduates with consent of instructor.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 204B – Microeconomic Analysis II (4 units)

Course Description: Behavior in imperfectly competitive markets—monopoly and price discrimination; oligopoly. Introduction to noncooperative game theory. Analysis of decisions made under risk and uncertainty and imperfect information. The economics of externalities and public goods.

Prerequisite(s): ARE 204A; or consent of instructor.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 214 – Development Economics (4 units)

Course Description: Review of the principal theoretical and empirical issues whose analysis has formed development economics. Analysis of economic development theories and development strategies and their application to specific policy issues in developing country contexts.

Prerequisite(s): ARE 100A; ARE 100B; ECN 101; ARE 204A and ECN 160A, ECN 160B recommended.

Learning Activities: Lecture 4 hour(s).

Cross Listing: ECN 214.

Grade Mode: Letter.

ARE 215A – Microdevelopment Theory & Methods I (4 units)

Course Description: Agricultural development theory, with a focus on microeconomics. Agricultural household behavior with and without imperfections and uncertainty. Analysis of rural land, labor, credit and insurance markets, institutions, and contracts.

Prerequisite(s): ARE 200A or ARE 204A; ARE 240A recommended.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 215A.

Grade Mode: Letter.

ARE 215B – Open Macroeconomics of Development (4 units)

Course Description: Models and policy approaches regarding trade, monetary and fiscal issues, capital flows and debt are discussed in the macroeconomic framework of an open developing country. Basic analytical focus is real exchange rate and its impact on sectoral allocation of resources.

Prerequisite(s): (ARE 200A or ARE 204A); (ARE 214 or ARE 215A); (ARE 200D or ARE 205).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 215B.

Grade Mode: Letter.

ARE 215C – Microdevelopment Theory & Methods II (4 units)

Course Description: Extension of development theory and microeconomic methods. Agricultural growth and technological change; poverty and income inequality; multisectoral, including village and regional models. Computable general equilibrium methods and applications.

Prerequisite(s): ARE 215A.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 215C.

Grade Mode: Letter.

ARE 215D – Environmental & Economic Development (4 units)

Course Description: Interdisciplinary course drawing on theoretical and empirical research on interactions between environmental resource use and economic development processes. Analysis of issues emerging at the interface of environmental and development economics.

Prerequisite(s): ARE 200A; (ARE 204A or ARE 275).

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 215D.

Grade Mode: Letter.

ARE 222 – International Agricultural Trade & Policy (4 units)

Course Description: Analysis of country interdependence through world agricultural markets. Partial equilibrium analysis is used to study the impacts of national intervention on world markets, national policy choice in an open economy and multinational policy issues.

Prerequisite(s): (ARE 100B or ARE 204A); ECN 160A; or the equivalent of ECN 160A.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 223 – Economics of Agriculture (4 units)

Course Description: Analytic treatment of the historical development and contemporary role of agriculture in the global, U.S. and California economies. Uses economic reasoning and evidence to develop historical and conceptual understanding of the economics of agriculture, agricultural issues, and related government policies.

Prerequisite(s): ARE 204A (can be concurrent); ARE 256A (can be concurrent); or equivalent course(s) completed or concurrent required.

Learning Activities: Lecture 4 hour(s).

Enrollment Restriction(s): Open to M.S. students in Agricultural & Resource Economics; Ph.D. students in Agricultural & Resource Economics and qualified students from other UC Davis graduate groups/programs.

Grade Mode: Letter.

ARE 231 – Supply & Demand for Agricultural Products (4 units)

Course Description: Analysis of supply and demand for agricultural commodities emphasizing the effective use of microeconomic theory with econometric methods, and other empirical procedures, in conducting applied analysis of supply and demand at the firm and industry level.

Prerequisite(s): ARE 200A; ARE 202A; ARE 240A; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 232 – Agricultural Commodity Markets (4 units)

Course Description: Economic analysis of industries that produce, market, transport, store, and process basic commodities. Analysis of market equilibrium under perfect and imperfect competition, with and without government involvement.

Prerequisite(s): ARE 200A; ARE 202A; ARE 240A; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 233 – Agricultural Policy (4 units)

Course Description: Nature, formation, evolution, and institutions of economic policy applied to food, agricultural, and rural issues. Examples for detailed consideration include food security, commodity issues, and trade policy. Analytical approaches include static and dynamic welfare analysis, policy design, and political-economic analysis.

Prerequisite(s): ARE 200A; ARE 202A; ARE 240A; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 239 – Econometric Foundations (4 units)

Course Description: Prepares students for econometric theory and empirical work by examining the statistical foundation of econometrics. Special attention is paid to problems specific to non-experimental data common to social sciences. Topics from matrix algebra are also covered.

Prerequisite(s): Graduate standing or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 239.

Grade Mode: Letter.

ARE 240A – Econometric Methods (4 units)

Course Description: Least squares, instrumental variables, and maximum likelihood estimation and inference for single equation linear regression model; linear restrictions; heteroskedasticity; autocorrelation; lagged dependent variables.

Prerequisite(s): ARE 239; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240A.

Grade Mode: Letter.

ARE 240B – Econometric Methods (4 units)

Course Description: Topics include asymptotic theory and instrumental variables, pooled time-series cross-section estimation, seemingly unrelated regression, classical hypothesis tests, identification and estimation of simultaneous equation models, cointegration, errorcorrection models, and qualitative and limited dependent variable models.

Prerequisite(s): ARE 240A.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240B.

Grade Mode: Letter.

ARE 240C – Time Series Econometrics (4 units)

Course Description: Probability theory; estimation, inference and forecasting of time series models; trends and non-standard asymptotic theory; vector time series methods and cointegration; time series models for higher order moments and transition data; state-space modeling; the Kalman filter.

Prerequisite(s): ARE 240B; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240C.

Grade Mode: Letter.

ARE 240D – Cross Section Econometrics (4 units)

Course Description: Estimation and inference for nonlinear regression models for cross-section data; models for discrete data and for limited dependent variables; models for panel data; additional topics such as bootstrap and semiparametric regression.

Prerequisite(s): ARE 240B; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240D.

Grade Mode: Letter.

ARE 240E – Topics in Time Series Econometrics (4 units)

Course Description: Modern econometric techniques for time series data. Expand on topics covered in ECN 240A, ECN 240B and ECN 240C. Contents vary from year to year.

Prerequisite(s): ARE 240C; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240E.

Grade Mode: Letter.

ARE 240F – Topics in Cross Section Econometrics (4 units)

Course Description: Modern econometrics techniques for cross-section data. Expand on topics covered in ECN 240A, ECN 240B and ECN 240D. Contents vary from year to year.

Prerequisite(s): ARE 240D; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Cross Listing: ECN 240F.

Grade Mode: Letter.

ARE 252 – Optimization with Economic Applications (4 units)

Course Description: Microeconomic topics in the framework of mathematical programming.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 254 – Dynamic Optimization Techniques with Economic Applications (4 units)

Course Description: Necessary and sufficient conditions in the calculus of variations and optimal control, economic interpretations, the dynamic envelope theorem and transversality conditions, infinite horizon problems and phase diagrams, local stability and comparative statics of the steady state, comparative dynamics.

Prerequisite(s): Elementary knowledge of ordinary differential equations.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 255 – Applied Dynamic Structural Econometric Modeling (4 units)

Course Description: Covers structural econometric models of static games of incomplete information, single-agent dynamic optimization problems and multi-agent dynamic games, with a focus on applications to issues relevant to the environment, energy, natural resources, agriculture, and development.

Prerequisite(s): ARE 254.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 256A – Applied Econometrics I (4 units)

Course Description: First of two courses in the Masters-level econometrics sequence. The linear regression model and generalizations are applied to topics in applied economics. Tools for empirical research for problems requiring more sophisticated tools than standard regression models are emphasized.

Prerequisite(s): ARE 106 or ECN 140; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 256B – Applied Econometrics II (4 units)

Course Description: Second of two courses in the Masters-level econometrics sequence. The linear regression model and generalizations are applied to a variety of topics in applied economics. Tools for empirical research for problems requiring more sophisticated tools than standard regression models are emphasized.

Prerequisite(s): ARE 256A; or consent of instructor.

Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).

Grade Mode: Letter.

ARE 258 – Demand & Market Analysis (4 units)

Course Description: Application of theoretical material covered in ECN 204A and ECN 204B, with particular focus on production theory/factor demand and imperfect competition/market power. Use of theoretical models as a foundation for empirical economic analysis, and empirical exercises. Independent research on chosen topics, with empirical application.

Prerequisite(s): ARE 204B; ARE 256B; or consent of instructor.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 271 – Financial Economics (4 units)

Course Description: Risk, aversion, choice under uncertainty. Arrow-Debreu securities. Valuation and risk characteristics of financial assets, capital allocation, portfolio selection, Capital Asset Pricing Model, efficient market hypothesis. Applications to topics in agricultural, resource and development economics.

Prerequisite(s): ARE 204A; ARE 256A.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 275 – Economic Analysis of Resource & Environmental Policies (4 units)

Course Description: Development of externality theory, market failure concepts, welfare economics, theory of renewable and non-renewable resource use, and political economic models. Applications to policy issues regarding the agricultural/environment interface and managing resources in the public domain.

Prerequisite(s): ARE 204A.

Learning Activities: Lecture/Discussion 4 hour(s).

Cross Listing: ESP 275.

Grade Mode: Letter.

ARE 276A – Environmental Economics: Externalities (4 units)

Course Description: Introduces fundamental and recent research in environmental economics, focusing on the design, implementation and evaluation of environmental policy instruments to correct market failures. Exposure to economic theories and empirical techniques frequently used in this field.

Prerequisite(s): Students should have completed the first year graduate level sequence in microeconomics and econometrics.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 276B – Environmental Economics: Non-Market Valuation (4 units)

Course Description: Second Ph.D. field course in environmental economics, covering theory and econometrics of methods for valuing non-market goods and environmental quality changes. Topics include revealed preference (travel cost, hedonics, sorting equilibrium) and stated preference (contingent valuation, choice experiments, conjoint analysis) techniques.

Prerequisite(s): Students should have completed the first year graduate level sequence in microeconomics and econometrics.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 277 – Natural Resource Economics (4 units)

Course Description: Application of capital theory and dynamic methods to issues of optimal use of renewable and nonrenewable resources. Examination of policy issues associated with forests, fisheries, groundwater, energy resources, watersheds, soil, global climate, and wildlife.

Prerequisite(s): ARE 254; or consent of instructor.

Learning Activities: Lecture 4 hour(s).

Grade Mode: Letter.

ARE 290 – Topics in Agricultural & Resource Economics (3 units)

Course Description: Selected topics in agricultural and resource economics, focusing on current research.

Learning Activities: Lecture 3 hour(s).

Repeat Credit: May be repeated 4 time(s).

Grade Mode: Letter.

ARE 293 – Analysis of California Agriculture & Resources (3 units)

Course Description: Review and analysis of production, marketing, and resource issues facing agricultural firms in California. Application of economic theory and measurement to individual firm and industry decisions in an applied setting. Fieldwork-45 hours total, including one five-day summer field trip.

Learning Activities: Lecture 1.50 hour(s), Fieldwork 45 hour(s).

Grade Mode: Satisfactory/Unsatisfactory only.

ARE 298 – Directed Group Study (1-5 units)

Course Description: Advanced study through special seminars, informal group studies, or group research on problems for analysis and experimentation. Sections:(1) Managerial Economics; (2) Agricultural Policy; (3) Community & Regional Development; (4) Natural Resources; (5) Human Resources; (6) Research Methods & Quantitative Analysis.

Learning Activities: Variable.

Grade Mode: Letter.

ARE 299 – Individual Study (1-12 units)

Course Description: Sections: (1) Managerial Economics; (2) Agricultural Policy; (3) Community & Regional Development; (4) Natural Resources; (5) Human Resources; (6) Research Methods & Quantitative Analysis; and (7) Dissertation Research Prospectus.

Learning Activities: Variable.

Grade Mode: Satisfactory/Unsatisfactory only.

**ARE 299D – Special Study for Doctoral Dissertation
(1-12 units)**

Course Description: Special study for doctoral dissertation.

Learning Activities: Variable.

Repeat Credit: May be repeated.

Grade Mode: Satisfactory/Unsatisfactory only.

**ARE 396 – Teaching Assistant Training Practicum (1-4
units)**

Course Description: Teaching assistant training practicum.

Prerequisite(s): Graduate standing.

Learning Activities: Variable 3-36 hour(s).

Repeat Credit: May be repeated.

Grade Mode: Pass/No Pass only.