

## APPLIED ECONOMICS (AEC)

### AEC 121, DISCOVERING AGRICULTURAL AND RESOURCE ECONOMICS, 1 Credit

Explore issues, opportunities, and challenges in the dynamic and diverse employment field of agricultural and resource economics.

**Equivalent to:** AREC 121

### AEC 199, SPECIAL TOPICS, 1-4 Credits

Targeted courses that focus on specific topics in agricultural and resource economics. Topics may vary from term to term and from year to year. May be repeated for credit when topics differ.

**Equivalent to:** AREC 199

*This course is repeatable for 8 credits.*

### AEC 211, AGRICULTURAL AND FOOD MANAGEMENT, 4 Credits

Economic and business principles applied to the management of firms in agricultural and food industries, including farms, ranches and nurseries, agricultural input suppliers, packers, shippers, processors and food manufacturers and distributors; firm-level goal setting, information management and financial analysis.

**Prerequisite:** AEC 250 with C- or better or AEC 251 with C- or better or AREC 250 with C- or better or ECON 201 with C- or better or ECON 201H with C- or better

**Equivalent to:** AREC 211

*Available via Ecampus*

### AEC 221, AGRICULTURAL AND FOOD MARKETING, 3 Credits

Organization and functions of agricultural and food markets both domestic and international; market channels and supply chains for various agricultural commodities and food products; role of agribusiness, cooperatives, and government in marketing decisions.

**Equivalent to:** AREC 221

*Available via Ecampus*

### AEC 240, \*RURAL ECONOMICS OF PLACE AND PEOPLE, 3 Credits

Provides perspective on issues influencing rural communities and economic development in rural America. People, places and natural resources of rural communities play a vital role in economic vitality of the West, yet rural landscapes are changing faster than many urban counterparts. (Bacc Core Course)

**Attributes:** CPWC – Core, Pers, West Culture

**Equivalent to:** AREC 240

### AEC 243, \*GLOBAL POVERTY AND SUSTAINABLE DEVELOPMENT, 3 Credits

Students are introduced to the challenges of eradicating extreme poverty and achieving sustainable economic development in the world. Topics include: the measurement of poverty and inequality; analysis of food security and agricultural development; the role of health and education in economic development; credit markets; risk and insurance; climate change and biodiversity; gender equality; rural-urban and international migration; population growth and development; institutions and economic performance; the political economy of development. (Bacc Core Course)

**Attributes:** CPSI – Core, Pers, Soc Proc & Inst

### AEC 250, \*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY, 3 Credits

Examines how economic forces and social institutions cause environmental degradation and help build management solutions. Explains key economic concepts for valuing environmental resources and evaluating the trade-offs of alternative management approaches from private markets to regulation. Applies the concepts and theories to topical environmental issues such as water pollution and conserving biodiversity. (Bacc Core Course)

**Attributes:** CPSI – Core, Pers, Soc Proc & Inst

**Equivalent to:** AEC 250H, AREC 250, AREC 250

**Recommended:** MTH 111

*Available via Ecampus*

### AEC 250H, \*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY, 3 Credits

Examines how economic forces and social institutions cause environmental degradation and help build management solutions. Explains key economic concepts for valuing environmental resources and evaluating the trade-offs of alternative management approaches from private markets to regulation. Applies the concepts and theories to topical environmental issues such as water pollution and conserving biodiversity. (Bacc Core Course)

**Attributes:** CPSI – Core, Pers, Soc Proc & Inst; HNRS – Honors Course Designator

**Equivalent to:** AEC 250

**Recommended:** MTH 111

### AEC 251, \*INTRODUCTION TO AGRICULTURAL AND FOOD ECONOMICS, 3 Credits

An introductory applied microeconomics course focused on the unique challenges of agricultural and food systems. Topics include rational choice theory, models of supply and demand, and price formation, with particular attention on markets for agricultural and food products. Additional topics include market interdependencies, government policy, the behavior of firms, and market structure within agricultural and food systems. (Bacc Core Course)

**Attributes:** CPSI – Core, Pers, Soc Proc & Inst

**Recommended:** MTH 111

*Available via Ecampus*

## AEC 253, \*ENVIRONMENTAL LAW, POLICY, AND ECONOMICS, 4 Credits

A general introduction to federal environmental law and policy in the U.S. Familiarizes students with basic legal institutions and concepts of the American legal system, outlines the transition of environmental policy from its common law roots to its modern administrative law form, and gives an overview of the major federal environmental statutes. Relationships among legal theory and process and economic principles are emphasized. (Bacc Core Course)

**Attributes:** CPWC – Core, Pers, West Culture

**Equivalent to:** AREC 253

*Available via Ecampus*

## AEC 299, SPECIAL TOPICS, 1-4 Credits

Targeted courses that focus on specific topics in agricultural and resource economics. Topics may vary from term to term and from year to year. May be repeated for credit when topics differ.

**Equivalent to:** AREC 299

*This course is repeatable for 8 credits.*

## AEC 310, EXPLORING EXPERIENTIAL LEARNING OPPORTUNITIES, 2 Credits

Provides background and preparation for students' experiential learning (EL) activities. Students will be shown examples of appropriate EL, how to find and compete for opportunities, and how to establish and define their learning objectives for EL. Resume writing, appropriate conduct in the workplace, as well as writing and oral presentation skills will be covered. A proposal for an EL activity will be prepared and presented to classmates. Graded P/N.

**Recommended:** WR 121

## AEC 311, INTERMEDIATE APPLIED ECONOMICS I: PRODUCERS AND CONSUMERS, 4 Credits

An examination of the theories of consumer behavior and demand, production cost, the firm, supply, and competitive and monopoly market structures.

**Prerequisite:** ((AEC 250 with C- or better or AREC 250 with C- or better) or AEC 251 with C- or better or (ECON 201 with C- or better or ECON 201H with C- or better)) and (MTH 241 [C-] or (MTH 251 [C-] or MTH 251H [C-]))

**Equivalent to:** AREC 311

*Available via Ecampus*

## AEC 313, INTERMEDIATE APPLIED ECONOMICS II: MARKETS, WELFARE & POLICY, 4 Credits

Complementing the private-decision focus in AEC 311, the present course focuses on the intermediate microeconomic theory of social welfare and public decision-making. Topics include exchange, monopoly, game theory, social welfare, externalities, public goods and choice, asymmetric information, uncertainty, and cost-benefit analysis. Substantial attention will be given to the implications of these theories for real-world problems, especially regarding resource and environmental issues.

**Prerequisite:** MTH 241 with C- or better or (AEC 311 with C- or better or AREC 311 with D- or better or ECON 311 with C- or better)

**Equivalent to:** AREC 313

*Available via Ecampus*

## AEC 351, \*NATURAL RESOURCE ECONOMICS AND POLICY, 3 Credits

Application of principles of economics to identify the causes, consequences, and ways of dealing with natural resource problems, including problems associated with fisheries, forests, water resources, and land. Conceptual topics and policy applications. Emphasis is on developing students' skill in applying an economic way of thinking about natural resource management. (Bacc Core Course)

**Attributes:** CSGI – Core, Synth, Global Issues

**Prerequisite:** (AEC 250 with D- or better or AREC 250 with D- or better or ECON 201 with D- or better or ECON 201H with D- or better)

**Equivalent to:** AREC 351

**Recommended:** MTH 111

*Available via Ecampus*

## AEC 352, \*ENVIRONMENTAL ECONOMICS AND POLICY, 3 Credits

Provides an overview of the interrelationships between economic activity, the environment, and public policy. Through case studies, discussion groups, readings, and group activities, students learn how economists define and analyze environmental problems and the types of policies they advocate for managing environmental quality. CROSSLISTED as AEC 352/ECON 352. (Bacc Core Course)

**Attributes:** CSGI – Core, Synth, Global Issues

**Prerequisite:** AEC 250 with D- or better or AREC 250 with D- or better or ECON 201 with D- or better or ECON 201H with D- or better

**Equivalent to:** AREC 352

*Available via Ecampus*

## AEC 353, \*INTRODUCTION TO COASTAL AND MARINE RESOURCE ECONOMICS, 3 Credits

Introduces tools of economic analysis for understanding coastal and marine resource management. Surveys a selection of current topics in the field, emphasizing innovation in production and stewardship, institutions, and sustainability. (Bacc Core Course)

**Attributes:** CSST – Core, Synthesis, Science/Technology/Society

**Prerequisite:** MTH 111 with C- or better and (AEC 250 [C-] or AREC 250 [C-] or ECON 201 [C-] or ECON 201H [C-])

## AEC 372, AGRICULTURAL COOPERATIVES, 3 Credits

An introduction to and in-depth examination of the agricultural cooperative. Students will gain a working knowledge of the concepts, principles, and terminology of agricultural cooperatives through reference materials, lectures, presentations by guest speakers and a cooperatives tour. Students will consider the strengths and weaknesses of the agricultural cooperative as well as the unique management and operational challenges inherent to this form of business operation.

**Prerequisite:** AEC 211 with D- or better or AREC 211 with D- or better

**Equivalent to:** AREC 372

**AEC 388, AGRICULTURAL LAW, 4 Credits**

Application of legal principles to business decision making in farming, ranching, and the agricultural support industry. Consideration of the obligations arising out of contract, tort, property, water, public land, and natural resource law.

**Equivalent to:** AEC 388

*Available via Ecampus*

**AEC 399, SPECIAL TOPICS, 1-4 Credits**

Targeted courses that focus on specific topics in agricultural and resource economics. Topics may vary from term to term and from year to year. May be repeated for credit when topics differ.

**Equivalent to:** AEC 399H, AEC 399H

*This course is repeatable for 8 credits.*

**AEC 399H, SPECIAL TOPICS, 1-4 Credits**

Targeted courses that focus on specific topics in agricultural and resource economics. Topics may vary from term to term and from year to year. May be repeated for credit when topics differ.

**Attributes:** HNRS – Honors Course Designator

**Equivalent to:** AEC 399, AEC 399

*This course is repeatable for 8 credits.*

**AEC 401, RESEARCH AND SCHOLARSHIP, 1-16 Credits**

**Equivalent to:** AEC 401

*This course is repeatable for 16 credits.*

**AEC 402, INDEPENDENT STUDY, 1-16 Credits**

**Equivalent to:** AEC 402

*This course is repeatable for 16 credits.*

**AEC 403, THESIS, 1-16 Credits**

**Equivalent to:** AEC 403

*This course is repeatable for 16 credits.*

**AEC 405, READING AND CONFERENCE, 1-16 Credits**

**Equivalent to:** AEC 405

*This course is repeatable for 16 credits.*

**AEC 406, PROJECTS, 1-16 Credits**

**Equivalent to:** AEC 406

*This course is repeatable for 16 credits.*

*Available via Ecampus*

**AEC 407, SEMINAR, 1-16 Credits**

**Equivalent to:** AEC 407H, AEC 407, AEC 407H

*This course is repeatable for 16 credits.*

**AEC 407H, SEMINAR, 1-16 Credits**

**Attributes:** HNRS – Honors Course Designator

**Equivalent to:** AEC 407, AEC 407, AEC 407H

*This course is repeatable for 16 credits.*

**AEC 408, WORKSHOP, 1-16 Credits**

**Equivalent to:** AEC 408

*This course is repeatable for 16 credits.*

**AEC 410, INTERNSHIP, 1-6 Credits**

Practical on-the-job training in agricultural business, marketing, commercial agricultural production, or related private or public organizations. Graded P/N.

**Equivalent to:** AEC 410

*This course is repeatable for 6 credits.*

**AEC 421, ECONOMICS OF RURAL POVERTY AND THE U.S. SOCIAL SAFETY NET, 4 Credits**

Introduces students to the geography of poverty in the United States and the "social safety net" that the U.S. has constructed to reduce poverty and its negative effects. The course focuses on the geography of the social safety net, the operation and administration of the safety net, and how recent changes in the social safety net may have disadvantaged rural people and places.

**Equivalent to:** AEC 421, RS 421

*Available via Ecampus*

**AEC 432, ENVIRONMENTAL LAW, 4 Credits**

Legal relationships arising out of rights to air, water, and land. The impact of federal and state regulation on pollution control and on the production, use, and disposal of hazardous materials.

**Equivalent to:** AEC 432

*Available via Ecampus*

**AEC 434, ^BENEFIT-COST ANALYSIS, 4 Credits**

Develops the fundamental tools for Benefit-Cost Analysis, a technique for evaluating a project or investment by comparing the economic benefits with the economic costs of the activity. Examines the tricky topic of how to measure the benefits of non-market such as good health and higher environmental quality. The methods introduced here apply to a wide variety of situations. Explores the broad issues of how to think about uncertainty and risk, how to discount future costs and benefits, to value lives saved, and other challenging topics. (Writing Intensive Course)

**Attributes:** CWIC – Core, Skills, WIC

**Prerequisite:** AEC 311 with C- or better or ECON 411 with C- or better

**Equivalent to:** AEC 434

**Recommended:** STAT 352 or familiarity with regression analysis

*Available via Ecampus*

**AEC 440, THE ECONOMICS OF BUSINESS ORGANIZATION IN THE FOOD SYSTEM, 4 Credits**

Application of economic analysis to questions related to the choice of an appropriate form of business organization for a wide variety of food system enterprises. Topics include costs of contracting, costs of ownership, enterprise scope and scale, and the dynamics of business ownership and structure. Particular emphasis is given to entrepreneurial enterprises and cooperative businesses in the food system.

**Prerequisite:** AEC 311 with D- or better or ECON 311 with D- or better

## **AEC 442, AGRICULTURAL BUSINESS MANAGEMENT, 4 Credits**

Application of economic, financial, and strategic management principles to agricultural business with a focus on a case-study framework for analysis and business decision making for alternative business management strategies.

**Equivalent to:** AREC 442

## **AEC 444, COMMODITY FUTURES AND OPTIONS MARKETS, 4 Credits**

Provides an overview of the basic concepts needed to use commodity futures and options markets to successfully manage price risk. To address the increasingly global economy in which commodity transactions occur, the course also includes financial futures such as interest rates and currencies. Specific topics covered include contract standardization, speculation and hedging, opening and closing of positions, and basis, i.e. the relationship between cash and futures markets, input-output hedges, and spreads. Students also gain hands-on experience through a trading simulation.

**Equivalent to:** AREC 444

*Available via Ecampus*

## **AEC 446, INTRODUCTION TO APPLIED ECONOMETRICS, 4 Credits**

Introduces students to applied econometrics: the use of statistical techniques to estimate and test economic relationships. Topics include multiple regression models, multicollinearity, and simultaneous equations. The applications and labs will focus on econometric analysis of real world problems pertaining to issues in environmental, food, and resource economics and policy. Lec/lab.

**Prerequisite:** AEC 311 with D- or better and ST 351 [D-]

## **AEC 447, AGRICULTURAL PRICE AND MARKET ANALYSIS, 4 Credits**

Price determination for food and agricultural commodities; development of quantitative economic models that explain and predict prices and other market outcomes. Lec/lab.

**Equivalent to:** AREC 447

**Recommended:** AEC 311 and ST 351

## **AEC 448, ADVANCED TOPICS IN ENVIRONMENTAL AND RESOURCE ECONOMICS, 3 Credits**

Reviews core concepts of economic efficiency and market failures and then focuses on the economics of environmental regulation. Develops an appreciation for the structure of key concepts that underlie the economic approach to environmental issues and applications to policy and regulations. Builds skills in assessing regulatory policies from the perspective of economics.

**Prerequisite:** AEC 311 with D- or better and AEC 352 [D-]

## **AEC 452, MARINE ECONOMICS, 3 Credits**

Economic aspects of marine resource utilization and management will be analyzed. Topics include open access aspect of marine resources; conflict and allocation of marine resources, marine resource markets, marine recreation, pollution, and aquaculture, with special emphasis on commercial fisheries.

**Prerequisite:** AEC 351 with D- or better or AEC 352 with D- or better or AREC 351 with D- or better or AREC 352 with D- or better

**Equivalent to:** AREC 452

## **AEC 453, CONSERVATION ON PRIVATE LAND, 3 Credits**

Explore and experience the increasingly popular phenomenon of conservation on private land. This exploration includes the explosive growth of land trusts and the use of conservation easements to restrict the use of private land and often promote ecological goals.

## **AEC 454, RURAL DEVELOPMENT ECONOMICS AND POLICY, 3 Credits**

Learn economic and regional development conceptual frameworks. Explore U.S. rural development and government interventions. Discuss differing popular local strategies for development that emphasize building current assets like local entrepreneurship to attracting resources and incomes from outside the region like amenity migration and tourism.

**Equivalent to:** AREC 454

## **AEC 455, PROGRAM EVALUATION, 3 Credits**

Explores the leading methods for evaluating the effectiveness of public programs and policies, specifically focusing on causal inference and empirical applications.

**Prerequisite:** (AEC 311 with C- or better or ST 351 with C- or better) and AEC 313 [C-]

*Available via Ecampus*

## **AEC 460, CAPITAL INVESTMENT ANALYSIS USING AGBIZ LOGIC, 3 Credits**

Learn and understand the important factors in measuring the impacts of implementing technologies and/or conservation practices, adding value to products, or changing cropping systems or livestock enterprises. The AgBiz Logic™ software programs will be used to apply financial and economic principles to better understand and reduce the financial, production, marketing, and human resource risks facing agribusinesses.

**Equivalent to:** AREC 460

## **AEC 461, ^AGRICULTURAL AND FOOD POLICY ISSUES, 4 Credits**

Principles of agricultural and food policy formulation; agricultural price and income policies in relation to land use, water, and food policies; interrelationships among U.S. and foreign agriculture and trade policies. (Writing Intensive Course)

**Attributes:** CWIC – Core, Skills, WIC

**Prerequisite:** AEC 311 with D- or better or ECON 311 with D- or better

**Equivalent to:** AREC 461

## **AEC 465, AGRICULTURAL AND FOOD FINANCIAL MANAGEMENT, 4 Credits**

Students will develop risk management strategies utilizing the AgBiz Logic program to reduce the financial, production, marketing, and human resource risks facing agribusinesses. This course is designed to help students apply financial and economic principles to business decisions under diverse and changing circumstances. The course reviews basic financial reporting statements, details accounting and financing practices specific to agricultural and food enterprises.

**Prerequisite:** (AEC 211 with D- or better or AEC 211 with D- or better) and AEC 311 [D-]

**Equivalent to:** AEC 465

## **AEC 466, AGRICULTURAL AND FOOD MARKETING MANAGEMENT, 4 Credits**

Principles, trends, issues, barriers, policies, strategies and decisions involved in domestic and international marketing of perishable and storable agricultural commodities and food products from the point of production to the point of consumption. Topics include firm-level marketing concepts, the integration of marketing with firms' overall strategic management goals, as well as comparative studies across multiple outlets for agricultural and food products, to include local, regional, and global markets.

**Prerequisite:** AEC 221 with D- or better and (AEC 250 [D-] or AEC 251 [D-] or ECON 201 [D-])

## **AEC 475, WRITING BUSINESS PLANS: AGRICULTURE/FOOD-RELATED ENTERPRISES, 2 Credits**

Students choose an enterprise and write a comprehensive business plan that describes the business vision, marketing plan, financial projections, risk management, and implementation strategy. At the end of term selected students present their plan to a commercial lender.

**Equivalent to:** AEC 475

**Recommended:** AEC 211 and AEC 221

## **AEC 499, SPECIAL TOPICS, 1-16 Credits**

Various topics in agricultural and resource economics of special and current interest not covered in other courses.

**Equivalent to:** AEC 499

*This course is repeatable for 16 credits.*

## **AEC 501, RESEARCH AND SCHOLARSHIP, 1-16 Credits**

**Equivalent to:** AEC 501

*This course is repeatable for 16 credits.*

## **AEC 502, INDEPENDENT STUDY, 1-16 Credits**

*This course is repeatable for 16 credits.*

## **AEC 503, THESIS, 1-16 Credits**

**Equivalent to:** AEC 503

*This course is repeatable for 999 credits.*

## **AEC 505, READING AND CONFERENCE, 1-16 Credits**

**Equivalent to:** AEC 505

*This course is repeatable for 16 credits.*

## **AEC 506, SPECIAL PROJECTS, 1-16 Credits**

*This course is repeatable for 16 credits.*

## **AEC 507, SEMINAR, 1-16 Credits**

**Equivalent to:** AEC 507

*This course is repeatable for 16 credits.*

## **AEC 508, WORKSHOP, 1-16 Credits**

**Equivalent to:** AEC 508

*This course is repeatable for 16 credits.*

## **AEC 512, MICROECONOMIC THEORY I, 4 Credits**

Fundamental topics in microeconomic theory. Topics include utility maximization and consumer demand, profit maximization and the theory of the firm, and labor and capital markets.

**Recommended:** AEC 312 and MTH 252

## **AEC 513, MICROECONOMIC THEORY II, 4 Credits**

Emphasizes principles for microeconomic theory at the master's level. Builds upon the foundations covered in AEC 512, and extends the theory and principles to cover uncertainty, game theory, competitive market equilibrium and welfare analysis, imperfect competition, and market failures. Primary emphasis is on understanding microeconomic theory and the underlying assumptions, and how it is applied to real world settings.

**Prerequisite:** AEC 512 with C or better

## **AEC 521, ECONOMICS OF RURAL POVERTY AND THE U.S. SOCIAL SAFETY NET, 4 Credits**

Introduces students to the geography of poverty in the United States and the "social safety net" that the U.S. has constructed to reduce poverty and its negative effects. The course focuses on the geography of the social safety net, the operation and administration of the safety net, and how recent changes in the social safety net may have disadvantaged rural people and places.

**Equivalent to:** AEC 521, RS 521

*Available via Ecampus*

## **AEC 525, APPLIED ECONOMETRICS, 4 Credits**

General principles of applied econometric research are emphasized, including model building, data analysis, hypothesis testing, and evaluation and interpretation of results. A variety of estimators are applied to real data, including least squares, panel data, simultaneous equations, discrete choice, and limited dependent variable models.

## AEC 532, ENVIRONMENTAL LAW, 4 Credits

Legal relationships arising out of rights to air, water, and rights to air, water, and land. The impact of federal and state regulation on pollution control and on the production, use, and disposal of hazardous materials.

**Equivalent to:** AREC 532

*Available via Ecampus*

## AEC 534, ENVIRONMENTAL AND RESOURCE ECONOMICS, 3 Credits

Environmental problems and misuse of natural resources are caused by humans' behavior, and thus must be solved by changing behavior. Explores the ways economics is central to understanding the incentive behind the causes, consequences, and potential for effective solutions to environmental and resource problems involving air, water, fish, forests, climate change, and biodiversity. Builds on microeconomics principles to include theories of market failures, externalities, common-pool resources, and institutions, as well as growth and sustainability. Equips students with tools for non-market valuation and for critical evaluation of environmental policies' benefits and costs.

**Equivalent to:** AREC 534

**Recommended:** AEC 311 or AREC 311

*Available via Ecampus*

## AEC 540, THE ECONOMICS OF BUSINESS ORGANIZATION IN THE FOOD SYSTEM, 4 Credits

Application of economic analysis to questions related to the choice of an appropriate form of business organization for a wide variety of food system enterprises. Topics include costs of contracting, costs of ownership, enterprise scope and scale, and the dynamics of business ownership and structure. Particular emphasis is given to entrepreneurial enterprises and cooperative businesses in the food system.

**Recommended:** AEC 311 or ECON 311

## AEC 543, INTERNATIONAL TRADE, 4 Credits

Introduction to the major theories of international trade and to models that are useful for applied policy and regional analysis. Effects of trade and trade policy on consumers, workers, and firms are emphasized.

**Prerequisite:** AEC 513 with C or better

**Equivalent to:** AREC 543

## AEC 544, COMMODITY FUTURES AND OPTIONS MARKETS, 4 Credits

Provides an overview of the basic concepts needed to use commodity futures and options markets to successfully manage price risk. To address the increasingly global economy in which commodity transactions occur, the course also includes financial futures such as interest rates and currencies. Specific topics covered include contract standardization, speculation and hedging, opening and closing of positions, and basis, i.e. the relationship between cash and futures markets, input-output hedges, and spreads. Students also gain hands-on experience through a trading simulation.

**Equivalent to:** AREC 544

*Available via Ecampus*

## AEC 546, INTRODUCTION TO APPLIED ECONOMETRICS, 4 Credits

Introduces students to applied econometrics: the use of statistical techniques to estimate and test economic relationships. Topics include multiple regression models, multicollinearity, and simultaneous equations. The applications and labs will focus on econometric analysis of real world problems pertaining to issues in environmental, food, and resource economics and policy. Lec/lab.

**Recommended:** AEC 311 and ST 351

## AEC 548, ADVANCED TOPICS IN ENVIRONMENTAL AND RESOURCE ECONOMICS, 3 Credits

Reviews core concepts of economic efficiency and market failures and then focuses on the economics of environmental regulation. Develops an appreciation for the structure of key concepts that underlie the economic approach to environmental issues and applications to policy and regulations. Builds skills in assessing regulatory policies from the perspective of economics.

## AEC 550, ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS, 4 Credits

Presents concepts, theories, and methods used in the economic analysis of environmental and natural resource issues. The emphasis is on the economics of environmental policies and the development of decision rules regarding the efficient use of natural resources.

**Prerequisite:** AEC 512 with C or better

**Equivalent to:** AREC 550

## AEC 551, APPLICATIONS OF ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS, 4 Credits

Applies and expands upon concepts, theories, and methods in environmental and natural resource economics introduced in AEC 550. Topics include non-market valuation, discounting, and benefit-cost analysis, as well as the role and importance of institutions, appropriate research methods, and the philosophical basis for normative judgments in economics.

**Prerequisite:** AEC 550 with C or better or AREC 550 with C or better

**Equivalent to:** AREC 551

## AEC 552, MARINE ECONOMICS, 3 Credits

Economic aspects of marine resource utilization and management will be analyzed. Topics include open access aspect of marine resources; conflict and allocation of marine resources, marine resource markets, marine recreation, pollution, and aquaculture, with special emphasis on commercial fisheries. CROSSLISTED as AEC 552/MRM 552.

**Equivalent to:** AREC 552, MRM 552

**Recommended:** (AEC 351 or AEC 352 or AREC 351 or AREC 352)

## AEC 553, CONSERVATION ON PRIVATE LAND, 3 Credits

Explore and experience the increasingly popular phenomenon of conservation on private land. This exploration includes the explosive growth of land trusts and the use of conservation easements to restrict the use of private land and often promote ecological goals.

## **AEC 554, RURAL DEVELOPMENT ECONOMICS AND POLICY, 3 Credits**

Learn economic and regional development conceptual frameworks. Explore U.S. rural development and government interventions. Discuss differing popular local strategies for development that emphasize building current assets like local entrepreneurship to attracting resources and incomes from outside the region like amenity migration and tourism.  
**Equivalent to:** AEC 554

## **AEC 555, PROGRAM EVALUATION, 3 Credits**

Explores the leading methods for evaluating the effectiveness of public programs and policies, specifically focusing on causal inference and empirical applications.  
*Available via Ecampus*

## **AEC 560, CAPITAL INVESTMENT ANALYSIS USING AGBIZ LOGIC, 3 Credits**

Learn and understand the important factors in measuring the impacts of implementing technologies and/or conservation practices, adding value to products, or changing cropping systems or livestock enterprises. The AgBiz Logic™ software programs will be used to apply financial and economic principles to better understand and reduce the financial, production, marketing, and human resource risks facing agribusinesses.  
**Equivalent to:** AEC 560

## **AEC 565, AGRICULTURAL AND FOOD FINANCIAL MANAGEMENT, 4 Credits**

Students will develop risk management strategies utilizing the AgBiz Logic program to reduce the financial, production, marketing, and human resource risks facing agribusinesses. This course is designed to help students apply financial and economic principles to business decisions under diverse and changing circumstances. The course reviews basic financial reporting statements, details accounting and financing practices specific to agricultural and food enterprises.  
**Equivalent to:** AEC 565

**Recommended:** (AEC 211 or AEC 211) and AEC 311

## **AEC 566, AGRICULTURAL AND FOOD MARKETING MANAGEMENT, 4 Credits**

Principles, trends, issues, barriers, policies, strategies and decisions involved in domestic and international marketing of perishable and storable agricultural commodities and food products from the point of production to the point of consumption. Topics include firm-level marketing concepts, the integration of marketing with firms' overall strategic management goals, as well as comparative studies across multiple outlets for agricultural and food products, to include local, regional, and global markets.

**Recommended:** AEC 221 and (AEC 250 or AEC 251 or ECON 201)

## **AEC 599, SPECIAL TOPICS, 0-16 Credits**

Various topics in applied economics of special and current not covered in other courses. May be repeated for credit when topics differ.

**Equivalent to:** AEC 599

*This course is repeatable for 16 credits.*

## **AEC 601, RESEARCH AND SCHOLARSHIP, 1-16 Credits**

**Equivalent to:** AEC 601

*This course is repeatable for 16 credits.*

## **AEC 602, INDEPENDENT STUDY, 1-16 Credits**

**Equivalent to:** AEC 605

*This course is repeatable for 16 credits.*

## **AEC 603, THESIS, 1-16 Credits**

**Equivalent to:** AEC 603

*This course is repeatable for 999 credits.*

## **AEC 605, READING AND CONFERENCE, 1-16 Credits**

**Equivalent to:** AEC 605

*This course is repeatable for 16 credits.*

## **AEC 606, SPECIAL PROJECTS, 1-16 Credits**

*This course is repeatable for 16 credits.*

## **AEC 607, SEMINAR, 1-16 Credits**

**Equivalent to:** AEC 607

*This course is repeatable for 16 credits.*

## **AEC 608, WORKSHOP, 1-16 Credits**

**Equivalent to:** AEC 608

*This course is repeatable for 16 credits.*

## **AEC 611, ADVANCED MICROECONOMIC THEORY I, 4 Credits**

A rigorous development of the theory of consumption and production, with emphasis on duality.

**Prerequisite:** (AEC 512 with C or better and AEC 513 [C])

**Recommended:** MTH 254

## **AEC 612, ADVANCED MICROECONOMIC THEORY II, 4 Credits**

A rigorous extension of the theory of the consumer and firm to aggregate and heterogeneous populations, decision making under uncertainty, and related game theory concepts.

**Prerequisite:** AEC 611 with C or better

## **AEC 613, ADVANCED MICROECONOMIC THEORY III, 4 Credits**

A rigorous development of the theory of competitive equilibrium, market power, public goods, and information.

**Prerequisite:** AEC 612 with C or better

## **AEC 625, ADVANCED ECONOMETRICS I, 4 Credits**

Emphasizes the basic theory underlying the main types of estimators used in econometrics, as well as their application in empirical research. Includes derivation, properties, and application of method of moments, maximum likelihood, ordinary and generalized least squares, and instrumental variables estimators, statistical inference and hypothesis testing, and model building and specification analysis. Provides the necessary foundation for estimation techniques covered in AEC 626. Lec/lab.

**Prerequisite:** AEC 525 with C or better

## **AEC 626, ADVANCED ECONOMETRICS II, 4 Credits**

Extensions to the generalized linear regression model are considered: discrete choice, limited dependent variable, panel data, and simultaneous equations models, and new solutions to identification problems. Strong applied orientation, emphasizing problems of data measurement, model selection and specification.

**Prerequisite:** AEC 625 with C or better

## **AEC 627, COMPUTATIONAL ECONOMICS, 4 Credits**

Covers the numerical analysis of static optimization models and stochastic dynamic models in resource and development economics, emphasizing formulation, solution, and simulation of dynamic optimization, rational expectations, and arbitrage pricing models. Lec/lab.

## **AEC 640, SUSTAINABLE DEVELOPMENT, 3 Credits**

Surveys research on the quantitative economic analysis of sustainable development, with an emphasis on integrated assessment methods and models and their application to agriculture and rural development policy, agricultural technology impact assessment, and climate change impact assessment.

**Prerequisite:** AEC 611 with D- or better and AEC 612 [D-] and AEC 625 [D-]

**Equivalent to:** AREC 640

## **AEC 643, ADVANCED TOPICS IN DEVELOPMENT ECONOMICS, 3 Credits**

Introduces students to key issues in the economics of development and equips them with the theoretical and empirical tools required to conduct advanced research in these topics.

**Prerequisite:** AEC 613 with C or better and AEC 626 [C]

**Equivalent to:** AREC 643

## **AEC 651, ADVANCED NATURAL RESOURCE ECONOMICS, 3 Credits**

Contemporary economic theory of dynamic natural resource allocation is introduced. Assignments focus on analytical and numerical methods for solving dynamic optimization problems in resource and environmental management. Lecture and readings emphasize current research trends in the field and relevant advances in quantitative methodology.

**Prerequisite:** AEC 611 with C or better

**Equivalent to:** AREC 651

## **AEC 652, ADVANCED ENVIRONMENTAL ECONOMICS, 3 Credits**

Interrelationships of natural resource use and the environment; applied welfare and benefit-cost analysis; externalities and pollution abatement; non-market valuation of resources; property rights; legal and social constraints; policy approaches.

**Prerequisite:** (AEC 513 with C or better or AREC 513 with C or better) and (AEC 525 [C] or AREC 525 [C])

**Equivalent to:** AREC 652

## **AEC 653, EMPIRICAL ENVIRONMENTAL AND RESOURCE ECONOMICS, 3 Credits**

Introduces empirical methods at the current frontiers of research in environmental and resource economics. General topics may include the identification of non-market values, revealed and stated preference methods, environmental policy evaluation, equilibrium sorting models, and climate econometrics.

**Prerequisite:** AEC 513 with C or better and AEC 525 [C]

**Equivalent to:** AREC 653

## **AEC 699, SPECIAL TOPICS, 1-16 Credits**

Various topics in applied economics of special and current interest not covered in other courses.

**Equivalent to:** AREC 699

*This course is repeatable for 16 credits.*