

# ECONOMICS

College of Liberal Arts

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Graduate: TBD

## Career Possibilities

Economist • Agricultural Economist • Financial Analyst • Industrial Analyst • International Trade Economist • Labor Specialist • Market Research Analyst • Tax Analyst • Investment Analyst • Teacher • Securities Salesperson • Bank Management • Loan Officer • Investment Counselor • Social Researcher • Auditor • Credit Analyst • Statistician • Urban Planner (Some of these, and other careers, require additional education or experience. For more information, see [www.careers.csulb.edu](http://www.careers.csulb.edu).)

## Introduction

When resources are scarce, difficult choices must be made on how resources are to be divided among competing uses. Economics is a social science that addresses the efficient allocation of scarce resources.

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## Undergraduate Programs

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### Bachelor of Arts in Economics (120 units)

#### Requirements

Lower Division:

Complete each of the following courses with a grade of "C" or better:

ECON 100 Principles of Macroeconomics (3)  
Prerequisite: MATH 103 or higher.

ECON 101 Principles of Microeconomics (3)  
Prerequisite: MATH 103 or higher.

Complete the following course:

ACCT 201 Elementary Financial Accounting (3)  
Prerequisites: None

Complete one of the following courses with a grade of "C" or better:

MATH 115 Calculus for Business (3)  
Prerequisite: Appropriate ELM score, ELM exemption, or MAPB 11.

MATH 119A Survey of Calculus I (3)

Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 113.

MATH 122 Calculus I (4)

Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 111 and MATH 113.

Students with upper division standing declaring Economics as a major may substitute ECON 300 for ECON 100 and ECON 101.

Upper Division:

Complete each of the following courses with grades of "C" or better:

ECON 310 Microeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 311 Macroeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 380 Economic Statistics (4)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Take six additional upper-division courses in Economics of which at least two must be at the 400 level.

The following courses may not be used to satisfy the elective requirement in economics: ECON 300, and ECON 499.

### Option in Mathematical Economics and Economic Theory (120 units)

#### Requirements

Lower Division:

Complete each of the following courses with a grade of "C" or better:

ECON 100 Principles of Macroeconomics (3)  
Prerequisite: MATH 103 or higher.

ECON 101 Principles of Microeconomics (3)  
Prerequisite: MATH 103 or higher.

MATH 122 Calculus I (4)

Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 111 and MATH 113.

MATH 123 Calculus II (4)

Prerequisite: A grade of "C" or better in MATH 122.

MATH 224 Calculus III (4)

Prerequisite: A grade of "C" or better in MATH 123 or MATH 222.

Complete the following course:

MATH 247 Introduction to Linear Algebra (3)  
Prerequisite: MATH 123 or MATH 222.

Students with upper-division standing declaring the option may substitute ECON 300 for ECON 100 and ECON 101.

Upper Division:

*Economic Theory:*

Complete each of the following courses with grades of "C" or better:

ECON 310 Microeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 311 Macroeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

**Statistics:**

Take all of the following courses:

MATH 380 Probability and Statistics (3)  
Prerequisite: MATH 224.

STAT 381 Mathematical Statistics (3)  
Prerequisites: MATH 247, and a grade of "C" or better MATH 380.

**Advanced Theory and Quantitative Methods:**

Take at least one of the following courses:

ECON 403, ECON 410, ECON 411, ECON 420,  
ECON 485, ECON 486

**Elective Courses:**

At least four additional upper-division courses in economics of which at least one economics course must be taken at the 400 level. Students may take one course from the following in meeting the elective requirement: MATH 364A, MATH 485; STAT 410 or STAT 450; these will not substitute for the 400-level economics requirement. ECON 300, ECON 380, and ECON 499 may not be taken to meet the elective requirement.

## Bachelor of Arts in Business Economics (120 units)

### Requirements

**Lower Division:**

Complete each of the following courses with a grade of "C" or better:

ECON 100 Principles of Macroeconomics (3)  
Prerequisite: MATH 103 or higher.

ECON 101 Principles of Microeconomics (3)  
Prerequisite: MATH 103 or higher.

Complete the following course:

ACCT 201 Elementary Financial Accounting (3)  
Prerequisite: None

Students with upper division standing declaring business economics as a major may substitute ECON 300 for ECON 100 and ECON 101.

Complete one of the following courses with a grade of "C" or better:

MATH 115 Calculus for Business (3)  
Prerequisite: Appropriate ELM score, ELM exemption, or MAPB 11.

MATH 119A Survey of Calculus I (3)  
Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 113.

MATH 122 Calculus I (4)  
Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 111 and MATH 113.

**Upper Division:**

Complete each of the following courses with grades of "C" or better:

ECON 310 Microeconomic Theory (3)  
Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 311 Macroeconomic Theory (3)  
Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

**ECON 380 Economic Statistics (4)**

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Take six additional upper division courses from the following groups (at least two must be at the 400 level):

**Group A. Analytical Economics**

Take at least two courses from the following:  
ECON 340, ECON 341, ECON 355, ECON 366,  
ECON 430, ECON 434, ECON 438, ECON 450,  
ECON 462, ECON 464, ECON 470.

**Group B. Quantitative and Applied Economics**

Take at least two courses from the following:  
ECON 330, ECON 420, ECON 437, ECON 441,  
ECON 455, ECON 465, ECON 471, ECON 485,  
ECON 486.

**Group C. Business and Economics**

Take one course from the following:  
ECON 320, ECON 333; FIN 300.

Remaining elective may be any class offered by Economics.

The following courses may not be used to satisfy the elective requirement in economics: ECON 300, and ECON 499.

## Minor in Economics

The Minor in Economics is available to any non-Economics or non-Business Economics major.

A minimum of 18 units which must include:

**Lower Division:**

Complete each of the following courses with a grade of "C" or better:

ECON 100 Principles of Macroeconomics (3)  
Prerequisites: MATH 103 or higher.

ECON 101 Principles of Microeconomics (3)  
Prerequisite: MATH 103 or higher.

Students with upper division standing declaring the minor may substitute ECON 300 for ECON 100 and ECON 101 with departmental consent.

Complete one of the following courses with a grade of "C" or better:

MATH 115 Calculus for Business (3)  
Prerequisite: Appropriate ELM score, ELM exemption, or MAPB 11.

MATH 119A Survey of Calculus I (3)  
Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 113.

MATH 122 Calculus I (4)  
Prerequisite: Appropriate MDPT placement or a grade of "C" or better in MATH 111 and MATH 113.

**Upper Division:**

Complete each of the following courses with grades of "C" or better:

ECON 310 Microeconomic Theory (3)  
Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

ECON 311 Macroeconomic Theory (3)  
Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Take at least one additional upper division elective economics course.

The following courses may not be taken as upper division

electives in economics: ECON 300, ECON 495, ECON 499

## Minor in International Economics

The Minor in International Economics is available to any non-Economics or non-Business Economics major or non Option in Mathematical Economics and Economic Theory major.

A minimum of 15 units is required and must include:

Lower Division:

Complete each of the following courses with a grade of "C" or better:

ECON 100 Principles of Macroeconomics (3)

Prerequisites: MATH 103 or higher.

ECON 101 Principles of Microeconomics (3)

Prerequisite: MATH 103 or higher.

Students with upper division standing declaring the minor may substitute ECON 300 for ECON 100 and ECON 101.

Upper Division:

Complete each of the following courses with a grade of "C" or better:

ECON 366 Introduction to Development Economics (3)

Prerequisites: ECON 100 and ECON 101 or ECON 300.

ECON 372 International Economics (3)

Prerequisites: ECON 100 and ECON 101, or ECON 300.

Complete one additional upper division elective course from the following course list:

ECON 301 Economics of Public Issues (3)

Prerequisite: Completion of G.E. Foundation courses and a score of 11 or higher on the GWAR Placement Examination or successful completion of the necessary portfolio course that is a prerequisite for a GWAR Writing Intensive Capstone course (subject to approval by the General Education Governing Committee (GEGC)).

ECON 306 Environmental Issues of the World Economy (3)

Prerequisites: G.E. Foundation and the Category B requirement, and ECON 101.

ECON 313 History of Economic Thought (3)

Prerequisites: ECON 100 and ECON 101, or ECON 300.

ECON 341 Global Labor Market Issues (3)

Prerequisites: ECON 101 or ECON 300.

Other upper-division elective courses (additional prerequisites required): ECON 465, ECON 470, ECON 471.

4. Graduate students must consult with the graduate advisor for information concerning department procedures and for approval of their course of study upon admission.

## Advancement to Candidacy

Advancement usually occurs upon successful completion of the first 6 units. Students must also successfully complete the Graduation Writing Assessment Requirement (GWAR) and have a minimum GPA of 3.0 in order to advance to candidacy.

## Requirements

1. Complete 30 units of upper-division and graduate courses. All students must demonstrate competency in economic theory (microeconomics and macroeconomics) and applied economics (econometrics and research methods). Students must also take one general economics seminar and develop one field of concentration in economics.
2. Complete the following economic theory courses with a grade of "B" or better:
  - ECON 510 Advanced Microeconomics (3)  
Prerequisites: ECON 310 or equivalent with grades of "C" or better.
  - ECON 511 Advanced Macroeconomics (3)  
Prerequisites: ECON 311 or equivalent with grades of "C" or better.
3. Complete the following applied economic courses with a grade of "C" or better:
  - ECON 585 Econometrics I (4)  
Prerequisites: None
  - ECON 586 Econometrics II (4)  
Prerequisites: ECON 585.
  - ECON 587 Research Methods in Economics (3)  
Prerequisites: ECON 585
4. Complete the following field and seminar courses with a grade of "B" or better in the 600-level courses:
  - ECON 690 Seminar in Economics (3)  
Prerequisites: ECON 510, ECON 511, ECON 585, ECON 586, and ECON 587
  - ECON 691 Economics Research Lab (1)  
Co-requisite: ECON 690
  - One 600-level field course seminar (3)  
Prerequisites: ECON 510, ECON 511, ECON 585, ECON 586, ECON 587, and one corresponding 500-level course (3) in the same field with a "C" or better
5. Complete one additional 400- or 500-level elective (3) with a grade of "C" or better.
6. Maintain a minimum cumulative GPA of 3.0.
7. Pass a comprehensive exam. The comprehensive exam requires students to submit a research paper from a 600-level seminar and orally defend this research to a committee of three faculty members. This exam will assess the student's proficiency in economic theory, ability to apply economic theory, and proficiency in economic research. The faculty committee will determine if the student has successfully passed the exam based on the quality of the research paper and oral defense according to guidelines established by the department. )Note: In order to satisfy the culminating activity requirement (thesis, project, or comprehensive examination dependent upon the program), students must earn at least three (3) units and no more than six (6) units related to the completion of the culminating activity.)

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## Graduate Programs

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### Master of Arts in Economics

For detailed information about the program, please visit [www.csulb.edu/economics](http://www.csulb.edu/economics) and select "Graduate Program" or contact the graduate advisor.

#### Prerequisites

1. A bachelor's degree with a major in economics; or
2. A bachelor's degree with 18 units of core economics courses which include calculus, statistics, principles of microeconomics, principles of macroeconomics, intermediate microeconomics, and intermediate macroeconomics.
3. A minimum undergraduate GPA of 3.0 ("B") in core economics courses.

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## Courses (ECON)

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### LOWER DIVISION

#### 100. Principles of Macroeconomics (3)

Prerequisite: MATH 103 or higher.

Money and banking, price changes, national income analysis, business cycles, economic growth, fiscal and monetary policy, international trade.

#### 101. Principles of Microeconomics (3)

Prerequisite: MATH 103 or higher.

Business organization, price theory, allocation of resources, distribution of income, public economy.

### UPPER DIVISION

General Education Category A must be completed prior to taking any upper division course except upper division language courses where students meet formal prerequisites and/or competency equivalent for advanced study.

#### 300. Fundamentals of Economics (3)

Prerequisites: GE Foundation requirements.

Designed for non-majors. Presents basic training in economics for social studies teachers or citizens who wish to exercise a reasoned judgment about economic issues in public affairs.

#### 301. Economics of Public Issues (3)

Prerequisite: Completion of G.E. Foundation courses and a score of 11 or higher on the GEAR Placement Examination or successful completion of the necessary portfolio course that is a prerequisite for a GEAR Writing Intensive Capstone course (subject to approval by the General Education Governing Committee (GEGC)).

A writing-intensive approach to understanding and critically evaluating current social problems and public policies using basic economic analysis.

#### 306. Environmental Issues of the World Economy (3)

Prerequisites: G.E. Foundation and the Category B requirement, and ECON 101.

Interdisciplinary analysis of human impact on the atmosphere and biological diversity; consideration of policies to foster sustainable development with emphasis on the economic perspective.

#### 310. Microeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Analysis of economic concepts and their applications to business situations. Emphasis on supply and demand analysis, costs of production, variations of competition and monopoly, revenues, prices, profits and losses, and other aspects of the operations of the business enterprise.

#### 311. Macroeconomic Theory (3)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Determinants of levels of income, employment, and prices; of secular and cyclical changes in economic activity; and of the effects of public policies upon aggregate economic experience.

#### 313. History of Economic Thought (3)

Prerequisites: ECON 100 and ECON 101, or ECON 300.

Evolution of economics as a science. Doctrines of the different schools of economic thought. Study of the contributions of outstanding economists.

#### 317. Economic Analysis I (3)

Prerequisite(s): ECON 100, ECON 101, ESP 200 and one of the following: MATH 115 or MATH 119A or MATH 119B or MATH 122.

The study of the microeconomic theory, economic institutions and political institutions that are the foundation to developing public policy to achieve an efficient allocation of scarce resources.

Letter grade only (A-F).

#### 320. Money and Banking (3)

Prerequisites: ECON 100 and ECON 101.

Nature and functions of money and its relation to prices; the monetary system of the United States; the functions of banks, bank credit, foreign exchange and monetary control.

#### 330. Game Theory (3)

Prerequisites: ECON 101 or ECON 300.

A formal study of conflict and cooperation, and their application to modeling and analyzing an interactive situation, especially in the context of microeconomics.

#### 333. Managerial Economics (3)

Prerequisites: ECON 100, ECON 101 and either MATH 115, MATH 119A, or MATH 122.

The tools of marginal analysis and their application to managerial decisions and planning. Emphasis upon calculating solutions to operational problems. Topics include demand analysis, production and cost, pricing, and output decisions. Product and factor markets will be analyzed.

#### 340. Economics in Movies (3)

Prerequisites: ECON 101 or ECON 300

Application of economic concepts to real-world situations as depicted in movies. Economic analyses of incentives, trade-offs, supply and demand, insurance, the used car market, crime, pollution, and other topics.

#### 341. Global Labor Market Issues (3)

Prerequisites: ECON 101 or ECON 300.

Application of labor economic theory to global labor markets. Focus on international comparison of wages, unemployment, human capital, working conditions, and government labor policy.

Letter grade only (A-F).

#### 355. Law and Economics (3)

Prerequisites: ECON 100 and ECON 101, or ECON 300.

Analysis of economic concepts and their application to law and legal institutions. Emphasis on property law, contract law, accident law, crime control and judicial administration.

#### 366. Introduction to Development Economics (3)

Prerequisites: ECON 100 and ECON 101 or ECON 300.

Economic and social aspects of economic development. General analysis of all aspects of economies in developing countries. Application of concepts to current situation in developing countries from different parts of the world.

#### 372. International Economics (3)

Prerequisites: ECON 100 and ECON 101, or ECON 300.

Covers selected issues concerning the international economy from an interdisciplinary perspective. Topics include: International trade theory, the globalization production, political economy of trade policy, international economic institutions, bi-lateral and multi-lateral trade negotiations, and foreign exchange markets.

#### 380. Economic Statistics (4)

Prerequisites: ECON 100, ECON 101, and either MATH 115, MATH 119A, or MATH 122, with grades of "C" or better in all prerequisite courses.

Use of descriptive and inferential statistical concepts for the analysis of economic data. Topics include measures of central tendency and dispersion, probability theory, discrete and continuous probability



distributions, hypothesis testing, regression and correlation analysis.  
(Lecture 3 hours, activity 2 hours)

### **403. Mathematical Economics (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.  
Applications of calculus, linear algebra and other mathematical tools in formulating and solving economic problems. Designed for exceptional undergraduate students who intend to pursue a graduate degree in economics.

Letter grade only (A-F).

### **410./510. Advanced Microeconomics (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.  
Applications of microeconomic theory. Examination and analysis of particular markets and contemporary issues. Specific emphasis on policy analysis for government and business decisions. Designed for graduate students and exceptional undergraduate students who intend to pursue a graduate degree in economics.

Letter grade only (A-F).

### **411./511. Advanced Macroeconomics (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.  
Applications of macroeconomics, monetary and forecasting theory to operational management and planning decisions of government and business. Designed for graduate students and exceptional undergraduate students who intend to pursue a graduate degree in economics.

Letter grade only (A-F).

### **420. Forecasting (4)**

Prerequisites: ECON 311, and ECON 380 or MATH 380 with grades of "C" or better.

Principles and methods of forecasting. Evaluation of the reliability of existing forecasting techniques. Also covers use of the macroeconomic model as a basis for forecasting and the role of forecasts in the formulation of national economic policy.

(Lecture 3 hours, activity 2 hours.)

### **430. Industrial Organization (3)**

Prerequisite: ECON 310 with a grade of "C" or better.

The structure, behavior and performance of firms and industries. Implications of separation of ownership and control, Corporate social responsibility and the profit motive. The dilemma of size versus competition.

### **434. Economics of Regulation (3)**

Prerequisite: ECON 310 with a grade of "C" or better.

A comprehensive survey of the past, present and future of the political regulation of economic and business activity. Consideration of the rationale for regulation and deregulation and the creation, design and removal of regulatory practices.

### **437. Urban Economics (3)**

Prerequisite: ECON 310 with a grade of "C" or better.

Economic analyses of city formation and size, business and residential location decisions, land use. Application of microeconomic theory to urban transportation issues, residential segregation, urban poverty and crime, and housing markets. Introduction to local public finance and provision of local public goods.

Not open for credit to students with credit in ECON 537.

### **438. Regional Economics (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.

Economic evolution and growth of cities, states and countries. Roles of geography, demography, location of industries, and factors determining regional growth and development will be considered. Special attention will be paid to the economic integration of U.S. states and European nations.

Not open for credit to students with credit in: ECON 538

### **441. Labor Economics (3)**

Prerequisites: ECON 310, and ECON 380 or MATH 380 with grades of "C" or better.

Manpower resources and their utilization, with particular reference to labor unions, collective bargaining and related public policies. Effects of these institutions on production, employment, prices and patterns of income distribution.

### **450. Public Sector Economics (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.

Analysis of the theory of public goods. Criteria for efficient allocation of resources between private and public sectors. Possible responses of government externalities, such as environmental degradation. Emphasis on the allocation and distribution effects of government expenditures and taxation.

### **455. Transportation Economics (3)**

Prerequisites: ECON 310, and ECON 380 or MATH 380 with grades of "C" or better.

Economic analysis of intercity transportation, cost measurement, applications of pricing principles, project evaluation, and economic regulation. Policies towards railroads, air transportation, and intercity highways.

Letter grade only (A-F).

### **462. Environmental Economics (3)**

Prerequisite: ECON 310 or ECON 317 with a grade of "C" or better.

Economic analysis of environmental problems and policy. Market failures due to externalities, public goods, and common property resources will be examined. Private (market) and public (governmental) solutions to environmental problems are examined.

### **463. Energy Economics (3)**

Prerequisite: ECON 310 or ECON 317 with a grade of "C" or better.

Application of economic analysis to energy problems and policies. Representative topics include macroeconomic effects of energy price shocks, international financial fragility, OPEC pricing strategies, determinants of demand and supply, industrial organization and finance, investor and publicly owned utilities, domestic and international policies.

### **464. Natural Resource Economics (3)**

Prerequisite: ECON 310 or ECON 317 with a grade of "C" or better, and one of the following: ECON 380 or MATH 380 or BIOL 260 or STAT 108 or GEOG 200, or equivalent.

Microeconomic and capital theory applied to problems of conserving and managing natural resources. Analysis of public policies affecting renewable and nonrenewable resources including price controls, taxation and leasing. Representative topics include: forestry, fishery, energy, water, and mineral economics.

### **465. Economic Development (3)**

Prerequisites: ECON 310 and ECON 311 with grades of "C" or better.

Economic and social factors underlying economic development. Analysis of problems associated with economic growth of less developed countries. Evaluation of development policies.

### **470. International Trade (3)**

Prerequisite: ECON 310 with a grade of "C" or better.

Examines theories of trade, welfare implications of different trade policies, the political economy of trade policies, and global trading arrangements.

### **471. International Finance (3)**

Prerequisites: ECON 311 and ECON 380 or MATH 380 with grades of "C" or better.

Covers topics in international finance in both an applied and theoretical framework, such as the balance of payments, the foreign exchange market, income, trade, capital flows, asset market adjustment mechanisms, and exchange rate regimes.

### **485. Introduction to Econometrics (4)**

Prerequisites: ECON 310, ECON 311, and 380 or MATH 380 with grades of "C" or better.

Introduction to econometrics, with a focus on understanding and applying the classical linear regression model. Emphasis placed on applications of regression analysis.

Letter grade only (A-F). Not open for credit to students with credit in ECON 585. (Lecture 3 hours, activity 2 hours)

### **486. Econometrics II (4)**

Prerequisite: ECON 485 with a grade of "C" or better.

The second in a two-semester sequence introducing students to basic techniques in econometrics: advanced regression, including time-series and panel data analysis. Critical evaluation of selected examples of empirical economic research, and exercises in applied econometrics.

(Lecture 3 hours, activity 2 hours) Not open for credit to students with credit in: ECON 586.

### **490. Selected Topics in Economics (3)**

Prerequisite: Consent of instructor.

Topics of current interest in economics selected for intensive development.

May be repeated to a maximum of 6 units. Topics announced in the *Schedule of Classes*.

### **491H. Senior Honors Seminar in Economics (3)**

Prerequisites: Senior standing, ECON 485 or ECON 486, and consent of instructor.

Provides opportunity for students to integrate their knowledge of economics, statistics-econometrics and computer studies. Designed as a seminar in research where students will be expected to write a paper and present their research results orally. Research topics must be approved by instructor.

### **495. Field Studies Practicum (3)**

Prerequisites: ECON 310 or ECON 333 and consent of instructor.

Observation and practical experience, at a managerial level, in an appropriate business or government enterprise.

Applications for permission to enroll must be filed with the Economics Department at least six weeks prior to beginning of the semester involved.

May be repeated to a maximum of 6 units.

### **499. Directed Study (1-3)**

Prerequisite: Consent of instructor.

Independent study under the supervision of a faculty member.

May be repeated to a maximum of 6 units.

## **GRADUATE LEVEL**

### **500. Business Economics (3)**

Workings of the price system in resource allocation with special emphasis on the role of business in the economy. Analysis of the economic implications of various forms of industrial organization and the application of public policy to business activity.

Not open to students majoring in economics or pursuing an M.A. in economics. Letter grade only (A-F).

### **503. Mathematical Economics (3)**

Applications of calculus, linear algebra and other mathematical tools in formulating and solving economic problems.

Letter grade only (A-F). Not open for credit to students with credit in: ECON 403.

### **510./410. Advanced Microeconomics (3)**

Prerequisite: ECON 310 or equivalent with grades of "C" or better.

Applications of microeconomic theory. Examination and analysis of particular markets and contemporary issues. Specific emphasis on policy analysis for government and business decisions. Designed

for graduate students and exceptional undergraduate students who intend to pursue a graduate degree in economics.

Letter grade only (A-F).

### **511./411. Advanced Macroeconomics (3)**

Prerequisite: ECON 311 or equivalent with grades of "C" or better.

Applications of macroeconomics, monetary and forecasting theory to operational management and planning decisions of government and business. Designed for graduate students and exceptional undergraduate students who intend to pursue a graduate degree in economics.

Letter grade only (A-F).

### **537. Urban Economics (3)**

Economic analyses of city formation and size, business and residential location decisions, and land use. Application of microeconomic theory to urban transportation issues, residential segregation, urban poverty and crime, and housing markets. Introduction to local public finance and provision of local public goods.

Letter grade only (A-F).

### **538. Regional Economics (3)**

Economic evolution and growth of cities, states and countries. Roles of geography, demography, location of industries, and factors determining regional growth and development will be considered. Special attention will be paid to the economic integration of U.S. states and European nations.

Letter grade only (A-F).

### **555. Transportation Economics (3)**

Economic analysis of intercity transportation, cost measurement, applications of pricing principles, project evaluation, and economic regulation. Policies towards railroads, air transportation, and intercity highways.

Letter grade only (A-F).

### **562. Environmental Economics (3)**

Economic analysis of environmental problems and policy. Market failures due to externalities, public goods, and common property resources will be examined. Private (market) and public (governmental) solutions to environmental problems are examined.

Letter grade only (A-F).

### **563. Energy Economics (3)**

Application of economic analysis to energy problems and policies. Representative topics include macroeconomic effects of energy price shocks, international financial fragility, OPEC pricing strategies, determinants of demand and supply, industrial organization and finance, investor and publicly owned utilities, domestic and international policies.

Letter grade only (A-F).

### **564. Natural Resource Economics (3)**

Microeconomic and capital theory applied to problems of conserving and managing natural resources. Analysis of public policies affecting renewable and nonrenewable resources including price controls, taxation and leasing. Representative topics include: forestry, fishery, energy, water, and mineral economics.

Letter grade only (A-F).

### **565. Economic Development (3)**

Economic and social factors underlying economic development. Analysis of problems associated with economic growth of less developed countries. Evaluation of development policies.

Letter grade only (A-F).

### **570. International Trade (3)**

Examines theories of trade, welfare implications of different trade policies, the political economy of trade policies, and global trading arrangements.

Letter grade only (A-F).

**571. International Finance (3)**

Covers topics in international finance in both an applied and theoretical framework, such as the balance of payments, the foreign exchange market, income, trade, capital flows, asset market adjustment mechanisms, and exchange rate regimes.

Letter grade only (A-F).

**585. Econometrics I (4)**

First course in a two-semester sequence introducing students to basic techniques in econometrics. Basic statistics and the classical linear regression model are covered. Emphasis is given to computing estimators using simulated and actual data sets.

Letter grade only (A-F). (Lecture 3 hours, activity 2 hours)

**586. Econometrics II (4)**

Prerequisite: ECON 585

The second in a two-semester sequence in advanced econometric and time series techniques. Current techniques to analyze panel data and to forecast using time series data. Emphasis is placed on empirical techniques commonly used in applied econometric analysis to support decision-making

Letter grade only (A-F). (Lecture 3 hours, activity 2 hours)

**587. Research Methods in Economics (3)**

Prerequisite: ECON 585

Applications of research methods to economics. Topics include: developing a research question, performing a literature review, data compilation and statistical analysis.

Letter grade only (A-F).

**597. Directed Studies (1-3)**

Prerequisite: Consent of instructor.

Intensive reading and/or practical research in economics.

Letter grade only (A-F).

**660. Seminar in Natural Resources and the Environment (3)**

Prerequisites: ECON 510, ECON 511, ECON 585, ECON 586, 587, and one of the following: ECON 562, ECON 563 or ECON 564.

Research methods applied to selected topics from energy, natural resources, and the environment.

Letter grade only (A-F). (Seminar 3 hours.)

**666. Seminar in Transportation Economics (3)**

Prerequisites: ECON 510, ECON 511, ECON 555, ECON 585, ECON 586, and ECON 587.

Advanced topics in transportation economics including passenger and freight transportation issues, congestion pricing, toll roads, mass transit systems, maritime economics, transportation regulation, firm performance, as well as welfare effects of transportation policy.

Letter grade only (A-F).

**670. Seminar in International Trade and Development (3)**

Prerequisites: ECON 510, ECON 511, ECON 585, ECON 586, ECON 587, and one of the following: ECON 565, ECON 570 or ECON 571.

Selected topics dealing with current problems and solutions in international trade, finance, and development.

Letter grade only (A-F).

**690. Seminar in Economics (3)**

Prerequisites: ECON 510, ECON 511, ECON 585, ECON 586, and ECON 587.

Corequisite: ECON 691

Seminar on topics of current interest in economics.

May be repeated to a maximum of 6 units with different topics.

Letter grade only (A-F).

**691. Economics Research Lab (1)**

Corequisite: ECON 690

Practical applications, empirical exercises, and research methods in economics.

Letter Grade only (A-F), May be repeated to a maximum of 2 units in different semesters, 1 hour contact.

**697. Directed Research (1-3)**

Prerequisite: Consent of instructor.

Independent research under the guidance of a faculty member.

Letter grade only (A-F).