ECONOMICS

Chair: Brian Duncan
Program Assistant: Christine Lukvec
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Overview
Economics is the science of human behavior in market and non-market contexts. The rigorous and general scientific approach that characterizes economics lends itself to a remarkably wide field of practical application. Economists regularly apply their methods of analysis in fields such as government policy, international trade and finance, economic development, portfolio management and banking. But economics is increasingly seen as providing important insight into an enormous variety of social issues, including health care provision and health-related behaviors, law, criminal activity, environmental and natural resource problems, political activity, education, marketing and sports. The broad and rigorous training of economics majors accounts for the significant demand for their services in virtually every industry and government agency. Economics provides excellent preparation for advanced graduate study as well. Recent studies indicate that economics is a preferred undergraduate degree for those wishing to move on to prestigious business graduate programs and law schools.

Undergraduate Information

Economics Major
Click here (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-ba/) to learn about the requirements for an Economics Major.

Economics Minor
Click here (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-minor/) to learn about the requirements for an Economics Minor.

Economics Certificate
Click here (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/health-development-economics-undergraduate-certificate/) to learn about the requirements for an Health and Development Economics Undergraduate Certificate.

Economics Bachelors to Masters programs
Click here (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-ba-ma/) to learn about the requirements for the Economics BA to Economics MA.
Click here (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-4--1-ba-health-economics-ms/) to learn about the requirements for the Economics BA to Health Economics MS.

Honors in Economics
Students wishing to earn departmental honors in economics should consult with their advisor no later than the beginning of their senior year.

Cum laude will be awarded to students who complete an economics major with a 3.5 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight such courses, and either two additional electives in economics beyond those required for the major, taken at the 4000 or higher level, or an acceptable honors thesis. The thesis must be approved by a three-member committee of department faculty and will include a presentation of the results to that committee. Students should register for the thesis, using ECON 4850 Honors Independent Study: ECON as the course number, as a 3-semester hour independent study, in addition to the regular requirements for the major.

Magna cum laude will be awarded to students who complete an economics major with a 3.88 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight courses, and who complete an honors thesis designated as “acceptable” by their thesis committee.

Summa cum laude will be awarded to students who complete an economics major with a 3.88 GPA in all upper-division (3000+) courses in economics taken at CU Denver, with a minimum of eight courses, and who complete an honors thesis designated as “outstanding” by their thesis committee.

In order to be recognized in the graduation program as “Honors Pending,” a draft of the thesis must be submitted to the chair of the committee four weeks prior to the end of the semester. The oral presentation and other requirements must be completed one week before graduation.

In order to be recognized in the graduation program with the specific honors degree being conferred, e.g., summa, magna, etc., students must turn in the completed final copy of the honors thesis four weeks prior to the end of the semester, along with meeting other requirements by the week before graduation. Otherwise, recognition will come with the diploma after graduation.

Students who do not have an advisor should contact the department for assignment to an advisor. Students should meet with their advisor at least twice a year.

Graduate Information
Please go to the Graduate (http://catalog.ucdenver.edu/cu-denver/graduate/schools-colleges-departments/college-liberal-arts-sciences/economics/) catalog to read about our graduate programs.

Programs

- Economics, 4 + 1 BA/ MA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-ba-ma/)
- Economics, 4 + 1 BA/ Health Economics, MS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-4--1-ba-health-economics-ms/)
- Economics, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-ba/)
• Economics Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-minor/)
• Health and Development Economics Undergraduate Certificate (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/health-development-economics-undergraduate-certificate/)

Faculty

Professors:
Laura M. Argys, PhD, University of Colorado Boulder
Brian J. Duncan, PhD, University of California at Santa Barbara
Daniel I. Rees, PhD, Cornell University
W. James Smith, PhD, University of Colorado Boulder
Buhong Zheng, PhD, West Virginia University

Associate Professors:
Andrew I. Friedson, PhD, Syracuse University
Hani Mansour, PhD, University of California at Santa Barbara

Assistant Professors:
Ryan Brown, PhD, Duke University
Chloe East, PhD, University of California Davis
Maulik Jagnani, PhD, Cornell University
Phillip Luck, PhD, University of California Davis
Andrea Velasquez, PhD, Duke University

Clinical Teaching Assistant Professors:
Enoch Cheng, PhD, University of California-Los Angeles
Ernest Boffy-Ramirez, PhD, University of California at Santa Barbara
Soojae Moon-Anderson, PhD, University of Colorado Boulder

Instructors:
Debbie Evercloud, PhD, University of Virginia
Nicholas Golding, MA, Ohio State University
Lawrence Hamelin, MA, University of Colorado Denver
Kyle J. Hurst, MA, Baylor University
Kyle Montanio, PhD, University of Rhode Island
George K. Quansah, MA, University of Colorado Denver
Yue Shen, PhD, Queen’s University
Kawin Thamtanajit, PhD, University of Delaware
Chun-Chieh Hu, PhD, Syracuse University

Economics (ECON)

ECON 1010 - Economics of Social Issues (3 Credits)
This course is designed for non-majors. Majors in economics will not receive credit toward departmental degree requirements. The focus of the course is on current issues in the economy, including poverty, social security, airline deregulation, government control of prices, economics of higher education, free trade, race and gender discrimination, unemployment, the role of government, and the national debt. Max hours: 3 Credits.
Grading Basis: Letter Grade

ECON 1111 - First Year Seminar (3 Credits)
Restriction: Restricted to Freshman level students. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to Freshman level students

ECON 2012 - Principles of Economics: Macroeconomics (3 Credits)
Covers topics of inflation, unemployment, national income, growth and problems of the national economy, stabilization policy, plus others at the discretion of the instructor. Purpose is to teach fundamental principles, to open the field of economics in the way most helpful to further a more detailed study of special problems, and to give those not intending to specialize in the subject an outline of the general principles of economics. Term offered: fall, spring, summer. Max hours: 3 Credits.
GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1.
Grading Basis: Letter Grade
Additional Information: Denver Core Requirement, Social Sciences; GT courses GT Pathways, GT-SS1, Soc Behav Sci:Econ or Pol.
Typically Offered: Fall, Spring, Summer.

ECON 2022 - Principles of Economics: Microeconomics (3 Credits)
Topics include price determination in a market system composed of households and firms: resource allocation and efficiency of various market structures, plus others at the discretion of the instructor. Note: Complementary to and normally taken following ECON 2012. ECON 2012 is not a prerequisite for ECON 2022. Term offered: fall, spring, summer. Max hours: 3 Credits. GT: Course is approved by the Colorado Dept of Higher Education for statewide guaranteed transfer, GT-SS1.
Grading Basis: Letter Grade
Additional Information: Denver Core Requirement, Social Sciences; GT courses GT Pathways, GT-SS1, Soc Behav Sci:Econ or Pol.
Typically Offered: Fall, Spring, Summer.

ECON 3050 - Decision Making (3 Credits)
This course discusses current research on decision making/behavioral economics, as well as its application to individual well-being and public policy. You will gain insights on how and why people can be irrational in their daily decisions. Cross-listed with PBHL 3050 and PSYC 3050. Max hours: 3 Credits.
Grading Basis: Letter Grade

ECON 3100 - Economics of Race and Gender (3 Credits)
Overview of the determinants of wages, employment and education in the labor market. Emphasizes the investigation of the evidence and theories of differentials that appear to be associated solely with race and sex, and public policies associated with discrimination and poverty. Prereq: ECON 2022 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.
Additional Information: Denver Core Requirement, Cultural Diversity.
Typically Offered: Fall, Spring, Summer.

ECON 3300 - Economics of Crime and Punishment (3 Credits)
Presents the economic approach to crime. Teaches economic reasoning in the analysis of the determinants of criminal activity, provides an in-depth analysis of the importance of socioeconomic factors in determining crime. Investigates the relative importance of labor market conditions, deterrence, and other factors in the level of criminal activity. Also covers topics to reduce crime such as, the death penalty, issues around victimless crime and public choices. Prereq: ECON 2022 with a C- or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.
ECON 3366 - Managerial Economics (3 Credits)
Prepares the student for economic analysis of micro- and macro-economic analysis. Emphasis on model-building techniques, solution methods, and economic interpretations.
Prereq or Coreq: ECON 2012 with a C- or higher, preq: ECON 2022 and College Algebra or higher (MATH 1110 or MATH 1070 or MATH 1401 or MATH 1130 or MATH 2411 or MATH 2421) with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.

ECON 4030 - Data Analysis with SAS (3 Credits)
Covers techniques for handling and interpreting economic data and conducting econometric analyses using SAS programming. Provides hands-on data management and analyses with large data sets with applications to business and economics, and prepare students for SAS Base Programmer certification exam.
Prereq: ECON 3811 with a C- or higher. Cross-listed with ECON 5030. Term offered: fall, spring. Max hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 4401 - Topics in Economics (3 Credits)
Studies special topics in economics to be selected by the instructor.
Note: May be repeated for credit when topics vary. Repeatable. Max hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 3366 - Managerial Economics (3 Credits)
Prepares the basic core of economic theory and its use for sound managerial decision making. Emphasis on the practical applications of the concepts learned in economics to the resolution of everyday problems. Note: Students will not receive credit for ECON 3366 if they take it simultaneously or after successfully completing ECON 4310.
Prereq: ECON 2022 with a C- or higher. Term offered: summer. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.

ECON 3400 - Economics of Sex and Drugs (3 Credits)
Examines the political and policy issues surrounding controversial topics in human behavior. Economic models and reasoning are applied to examine issues such as juvenile substance use and abuse, and teen pregnancy.
Prereq: ECON 2022 with a C- or higher. Term offered: fall, spring, summer. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.

ECON 3415 - Issues in International Trade and Finance (3 Credits)
A survey of International Trade and Finance is provided and then applied to contemporary issues such as gains from trade, global and local economic inequality, trafficking, global capital markets, debt, the Eurozone and transmission of inflations and recessions internationally. This course is for non-economics majors & economics minors. Students may not receive credit if they take it after they have completed ECON 4410 or ECON 4420.
Prereq: ECON 2012 and ECON 2022 with a C- or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2012 and ECON 2022 with a C- or higher.

ECON 3477 - Topics in Economic Development (3 Credits)
This is a survey course in development economics intended to provide a basic understanding of the economies of developing nations. Topics include issues and policies in economic development, comparative economic growth, demographic change, poverty, inequality, and migration. This course is for non-economics majors & economics minors. Students may not receive credit if they take it after they have completed ECON 4770.
Prereq: ECON 2012 or ECON 2022 with a C- or higher. Term offered: spring, summer. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2012 or ECON 2022 with a C- or higher.

ECON 3811 - Statistics with Computer Applications (4 Credits)
Introduces statistical methods and their application to quantitative problems in economics and social sciences. Note: Recitation is required.
Prereq or Coreq: ECON 2022 AND Prereq: College Algebra or higher (MATH 1110, MATH 1070, MATH 1401, MATH 2411, MATH 2421, MATH 1130, or ECON 3801) with a C- or higher. Term offered: fall, spring. Max hours: 4 Credits.
Grading Basis: Letter Grade
Prereq or co-req: ECON 2022 AND Prereq: College Algebra or higher (MATH 1110, MATH 1070, MATH 1401, MATH 2411, MATH 2421, MATH 1130, or ECON 3801) with a C- or higher.
Typically Offered: Fall, Spring.

ECON 3939 - Internship (1-3 Credits)
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 GPA and must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 4050 - Special Economic Problems (1-8 Credits)
Provides students the opportunity to critically evaluate some practical and theoretical problems under supervision, and to present results of their thinking to fellow students and instructors for critical evaluation.
Prereq: ECON 2012 and ECON 2022 with a C- or higher. Note: ECON 4050 majors in economics, others by permission of instructor. Cross-listed with ECON 5050. Repeatable. Max Hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 4770 - Issues in Economic Development (3 Credits)
Intermediate Microeconomic Theory (3 Credits)
Production, price and distribution theory. Study of value and distribution problems in economics and social sciences. Note: Recitation is required.
Prereq or Coreq: ECON 2022 AND Prereq: College Algebra or higher (MATH 1110, MATH 1070, MATH 1401, MATH 2411, MATH 2421, MATH 1130, or ECON 3801) with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq or co-req: ECON 2022 AND Prereq: College Algebra or higher (MATH 1110, MATH 1070, MATH 1401, MATH 2411, MATH 2421, MATH 1130, or ECON 3801) with a C- or higher.
Typically Offered: Fall, Spring.

ECON 4801 - Introduction to Mathematical Economics (3 Credits)
Introduces the use of mathematics in micro- and macro-economic analysis. Emphasis on model-building techniques, solution methods, and economic interpretations.
Prereq or Coreq: ECON 2012 with a C- or higher, preq: ECON 2022 and College Algebra or higher (MATH 1110 or MATH 1070 or MATH 1401 or MATH 1130 or MATH 2411 or MATH 2421) with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq or Coreq: ECON 2012 with a C- or higher, preq: ECON 2022 and College Algebra or higher (MATH 1110 or MATH 1070 or MATH 1401 or MATH 1130 or MATH 2411 or MATH 2421) with a C- or higher.
Typically Offered: Fall, Spring.

ECON 4995 - Enterprise Credit (1-12 Credits)
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Students may not receive credit if they take it after they have completed ECON 4995. Prereq: ECON 4995 with a C- or higher. Cross-listed with ECON 5995. Repeatable. Max Hours: 12 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 12.

ECON 4999 - Independent Study (1-9 Credits)
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Students may not receive credit if they take it after they have completed ECON 4999. Prereq: ECON 4999 with a C- or higher. Cross-listed with ECON 5999. Repeatable. Max Hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 5001 - Internship (1-3 Credits)
Designed experiences involving application of specific, relevant concepts and skills in supervised employment situations. Prereq: Students must have junior standing and at least a 2.75 cumulative GPA must work with Experiential Learning Center advising to complete a course contract and gain approval. Term offered: fall, spring, summer. Repeatable. Max hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 5030 - Data Analysis with SAS (3 Credits)
Covers techniques for handling and interpreting economic data and conducting econometric analyses using SAS programming. Provides hands-on data management and analyses with large data sets with applications to business and economics, and prepare students for SAS Base Programmer certification exam.
Prereq: ECON 3811 with a C- or higher. Cross-listed with ECON 5030. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 3.

ECON 5401 - Topics in Economics (3 Credits)
Studies special topics in economics to be selected by the instructor.
Note: May be repeated for credit when topics vary. Repeatable. Max hours: 3 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 3.

ECON 54050 - Special Economic Problems (1-8 Credits)
Provides students the opportunity to critically evaluate some practical and theoretical problems under supervision, and to present results of their thinking to fellow students and instructors for critical evaluation.
Prereq: ECON 2012 and ECON 2022 with a C- or higher. Note: ECON 54050 majors in economics, others by permission of instructor. Cross-listed with ECON 5050. Repeatable. Max Hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.

ECON 54770 - Issues in Economic Development (3 Credits)
Intermediate Microeconomic Theory (3 Credits)
Production, price and distribution theory. Study of value and distribution theories under conditions of varying market structures, with special references to the contribution of modern theorists.
Prereq: ECON 3801 with a C- or higher or Calculus II or Calculus III with a B or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3801 with C- or higher or (MATH 2411 or MATH 2421 with B or higher)
Typically Offered: Fall, Spring.
ECON 4081 - Intermediate Macroeconomic Theory (3 Credits)
National income and employment theory. Primary emphasis placed on determination of employment and prices. Problems of unemployment and inflation analyzed and appropriate policies considered. Prereq: ECON 3801 with a C- or higher or MATH 2411 or MATH 2421 with a C or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with C or higher)
Typically Offered: Fall, Spring.

ECON 4090 - History of Economic Thought (3 Credits)
Traces the development of economic thought from ancient times to the 20th century. Considers the context in which these ideas were developed and their relationship to modern economic thought and contemporary economic problems. Note: Students may not receive credit for this course if they have already received credit for ECON 4091. Prereq: ECON 2012 and ECON 2022 with a C- or higher. Cross-listed with ECON 5090. Term offered: spring, fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2012 or ECON 2022 with a C- or higher
Typically Offered: Fall, Spring.

ECON 4110 - Money and Banking (3 Credits)
Surveys major monetary and fiscal institutions such as commercial banks, the federal reserve system, savings institutions, and the structure of debt. The relationships between households, firms and financial intermediaries are explored, and the tools available to macroeconomic policy makers are described and evaluated. Prereq: ECON 4081 with a C- or higher. Term offered: fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4081 with a C- or higher
Typically Offered: Fall.

ECON 4150 - Economic Forecasting (3 Credits)
Teaches forecasting techniques used in business and government to project trends and short-term fluctuations. Actual data are employed in instruction and labs. State-of-the-art spreadsheet and algorithms are introduced as part of the course work. Prereq: ECON 4811 with a C- or higher. Cross-listed with ECON 5150. Term offered: spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4811 with a C- or higher
Typically Offered: Fall.

ECON 4240 - Economic Policy Analysis (3 Credits)
Deals with the application of economic analysis to the government policy-making process. Topics include public goods provision, externalities, cost-benefit analysis, judicial decision making, the economic analysis of the political process, government regulation of business, and tax incidence. Prereq: ECON 2012, ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher). Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2012, ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher)

ECON 4310 - Managerial Economics (3 Credits)
The course adapts standard theory to more realistically discuss enterprise structure, firm and managerial behavioral incentives, and strategic behavior. Once a foundation is laid, successful and unsuccessful strategies and case studies are presented. Note: Students will not receive credit for ECON 3366 if they take it simultaneously or after successfully completing ECON 4310. Prereq: ECON 2022 with a C- or higher. Cross-listed with ECON 5310. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.

ECON 4318 - Urban Economics (3 Credits)
Why do cities form and why are they so productive? How does the value of land change as the urban landscape develops? How do we address the difficulties that challenge modern cities, such as affordable housing, congestion, and crime? Prereq: ECON 3811 and ECON 4071 with a C- or higher. Term offered: fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 and ECON 4071 with a C- or higher.

ECON 4320 - Financial Economics (3 Credits)
This course focuses on the economics of decision-making under conditions of risk and uncertainty. Topics include theories of efficient markets, rational expectations, speculative bubbles, random walks, portfolio analysis, options, derivatives and future markets. Emphasis is on the application of basic theories to economic agents’ behavior and case studies. Prereq: ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher), and ECON 3811 with a C- or higher. Term offered: spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher and ECON 3801 with a C- or higher or (MATH 2411 or MATH 2421 with B or higher), and ECON 3811 with a C- or higher
Typically Offered: Fall.

ECON 4410 - International Trade (3 Credits)
Trade theory identifies who wins and loses from trade and why there are usually overall gains. Explores issues in immigration, globalization, income inequality, tariffs, dumping, the WTO, the environment, wages, and growth strategies among others. Prereq: ECON 3811 with a C- or higher. Cross-listed with ECON 5410. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 with a C- or higher
Typically Offered: Fall, Spring.
ECON 4420 - International Finance (3 Credits)
The international adjustment process, including the foreign exchange market, balance of payments disequilibria, price and income adjustment, fiscal and monetary policy, and the international monetary system. Prereq: ECON 3811 with a C- or higher. Term offered: spring, fall. Max Hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 with a C- or higher
Typically Offered: Fall, Spring.

ECON 4430 - Economic Growth (3 Credits)
Explores causes of rapid growth or decline over long periods for different regions of the world. Inequality, sustainability, culture, climate, technology and resources all play significant roles. Data and examples are used to determine the important influences. Prereq: ECON 2022 and ECON 3811 with a C- or higher. Term offered: spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 with a C- or higher
Typically Offered: Spring.

ECON 4440 - Economic Incentives (3 Credits)
A free market can fail with poorly designed economic incentives. The course examines incentives at work in a wide range of markets and investigates the market conditions that lead to a high level of welfare for the society. One such condition is the incentive for every participant to reveal his/her true preference. The incentive environments examined in this course include the principal-agent problems, job market signaling, mandatory retirement, professor's tenure, auctions of artifacts and assets, private provision of public goods, marriage matching, matching of organ donation (kidneys and lungs), school admissions, and majority voting. Prereq: ECON 3811, ECON 4071 and (ECON 3801 or MATH 2411 or MATH 2421) with a B+ or higher, or instructor permission. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 and 3811 with a C- or higher
Typically Offered: Spring.

ECON 4450 - Game Theory and Economic Applications (3 Credits)
An introduction to economic applications of game theory. Concepts such as strategic and extensive form games, existence and selection of equilibrium will be covered. These concepts will be applied to understand market structure, location decisions, price competition, contracting, and auctions. Prereq: ECON 4071 with a C- or higher. Term offered: fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4071 with a C- or higher
Typically Offered: Fall.

ECON 4460 - Sports Economics (3 Credits)
Applies economic analysis to sports. Explores topics such as competition, on-field performance, players' compensation, profits in professional sports, anti-trust and labor law, the impact of sports on local communities and the links between athletics and education. Prereq: ECON 2022 with a C- or higher. Term offered: spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.
Typically Offered: Spring.

ECON 4461 - Economic Incentives (3 Credits)
The course examines incentives at work in a wide range of markets and investigates the market conditions that lead to a high level of welfare for the society. One such condition is the incentive for every participant to reveal his/her true preference. The incentive environments examined in this course include the principal-agent problems, job market signaling, mandatory retirement, professor's tenure, auctions of artifacts and assets, private provision of public goods, marriage matching, matching of organ donation (kidneys and lungs), school admissions, and majority voting. Prereq: ECON 3811, ECON 4071 and (ECON 3801 or MATH 2411 or MATH 2421) with a B+ or higher, or instructor permission. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811, ECON 4071 and (ECON 3801 or MATH 2411 or MATH 2421) with a B+ or higher, or instructor permission.

ECON 4465 - Economics of Natural Resources (3 Credits)
Examines economic models of renewable resource management and models of exhaustible resource depletion. Analyzes decisions made by private firms and governments affecting the methods and rate of resource development. Examines the effects of resource development on economic growth and environmental quality and the effects of economic development on resource scarcity. Prereq: ECON 2022 with a C- or higher. Cross-listed with ECON 5530. Max Hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 2022 with a C- or higher.

ECON 4470 - Economics of Population and Growth (3 Credits)
Theoretical modeling and data analysis will be used to analyze the economic causes, consequences and policy responses to population change through changes in fertility, marriage, health, mortality and migration. Prereq: ECON 2022 and (ECON 3811 or ECON 4811) with a C- or higher or instructor approval. Term offered: fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 and 2022
Typically Offered: Fall, Spring.

ECON 44740 - Industrial Organization (3 Credits)
Examines the determinants of, and linkages between, market structure, firm conduct, and industrial performance. Topics include: determinants of the market size; impact of different market structures on prices and outputs; strategic behavior of firms to prevent entry or induce exit of rival firms; collusion; price discrimination; advertising; competition, monopoly, and innovation; implications for economic efficiency and public policy. Prereq: ECON 4071 with a C- or higher. Cross-listed with ECON 5740. Term offered: spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4071 with a C- or higher
Typically Offered: Spring.
ECON 4770 - Development Economics (3 Credits)
This course provides a theoretical and empirical framework for analyzing economic problems in developing countries focusing on the role of individuals, families and institutions. Topics include poverty traps, human capital accumulation, gender discrimination, microcredit and violent conflict. Prereq: ECON 4811 with a C- or higher. Cross-listed with ECON 6770. Term offered: fall. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4811 with a C- or higher.
Typically Offered: Fall.

ECON 4803 - Mathematical Economics (3 Credits)
Application of mathematical techniques in micro-and macro-economic analysis. Topics include single and multivariable differentiation, basic matrix algebra, optimization, and integration with applications to economic models of consumption, production, market equilibrium, national accounting, and growth. Prereq: ECON 3801 or MATH 2411 or MATH 2421 and ECON 4071 with a C- or higher. Cross-listed with ECON 5803. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3801 or MATH 2411 or MATH 2421 and ECON 4071 with a C- or higher.
Typically Offered: Fall, Spring.

ECON 4811 - Introduction to Econometrics (3 Credits)
Introduces econometric methods and their applications to quantitative economic problems. Simple and multiple regression models and problems encountered in their applications are developed in lectures and applied computer projects. Prereq: ECON 3811 or MATH 3382 with a C- or higher. Term offered: fall, spring. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 3811 or MATH 3382 with a C- or higher.
Typically Offered: Fall, Spring.

ECON 4812 - Advanced Econometric Methods (3 Credits)
This course will focus on econometric methods used to generate causal inference in experimental and non-experimental settings. Topics covered will include the potential outcomes framework, randomized experiments, natural experiments, difference-in-differences, fixed effects, matching, instrumental variables, and regression discontinuity. Prereq: ECON 4811 with a C- or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ECON 4811 with a C- or higher.

ECON 4850 - Honors Independent Study: ECON (1-3 Credits)
Note: Students must submit a special processing form completely filled out and signed by the student and faculty member, describing the course expectations, assignments and outcomes, to the CLAS undergraduate advising office for approval. Term offered: fall, spring, summer. Max hours: 3 Credits.
Grading Basis: Letter Grade
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.