Economics

Department of Economics web page: https://business.lehigh.edu/departments/economics (https://business.lehigh.edu/departments/economics/)

Though economics is variously defined, modern-day definitions generally suggest that it is the study of the principles that govern the efficient allocation of resources. One of the greatest of the 19th century economists who did much to uncover these principles suggested a broader definition. Alfred Marshall described economics as "a study of mankind in the ordinary business of life and a part of the study of man."

This dual nature of economics, both technical and humanistic, is reflected in the fact that at Lehigh the Economics Major is available to students in the College of Business and the College of Arts and Sciences.

**Undergraduate Programs in Economics are available in both the College of Business and the College
of Arts & Sciences. Please see below.**

COLLEGE OF BUSINESS

Major in Economics

Students in the College of Business electing to major in economics must take the college core courses listed in the College of Business section of this catalog. The College of Business core requires that students take ECO 001, ECO 045 and either ECO 119 or ECO 146. Majors in economics must take both ECO 119 and ECO 146, as well as ECO 157 and at least 12 credits of elective economics courses for a total of 18 credits beyond the core requirements. The Economics Major provides students with a solid grounding in the basic tools and models used in economic analysis. Combined with the College of Business core, it prepares students for careers in business, consulting, non-profit organizations, or government. The requirements beyond the College of Business core are:

Common Economics Core

| ECO 119 | Intermediate Macroeconomic Analysis | 3 |
| or ECO 146 | Intermediate Microeconomic Analysis | |

Quantitative Economics Core

| ECO 157 | Statistical Methods II | 3 |

Students must take 12 credits from the following electives. There must be at least one course from each list, and at least two of the four courses must be at the 300 level.

Electives - Field Courses

ECO 209	Comparative Economic Systems	3
ECO 229	Economics of Money and Banking	3
ECO 303	Economic Development	3
ECO 304	Economic Growth	3
ECO 311	Environmental Economics	3
ECO 312	Mathematical Economics	3
ECO 322	Competitor and Market Analysis	3
ECO 338	International Economics	3
ECO 339	International Trade	3
ECO 352	Behavioral Economics	3
ECO 353	Public Economics	3
ECO 358	Game Theory	3
ECO 363	Labor Economics	3
ECO 365	Business, Government, and Macroeconomic Policy	3
ECO 368	Health Economics	3

Electives - Applying Economics

ECO 201	Federal Reserve Challenge Competition [1]	1-3
ECO 203	Inclusive Finance and Economic Development	3
ECO 234	The Economics of Gender and Race	3

ECO 259	Project Evaluation Practicum [2]	3
ECO 273	Community Consulting Practicum [2]	3
ECO 274	Supervised Research [1,2]	1-3
ECO 301	Econometric Software	3
ECO 314	Energy Economics	3
ECO 324	The Economics of the Sports Industry	3
ECO 325	Consumer Insights through Data Analysis	3
ECO 328	Electricity Economics	3
ECO 333	The Economics of Business Decisions	3
ECO 335	Cost-Benefit Analysis	3
ECO 336	Antitrust, Regulation, and the New Economy	3
ECO 342	The Chinese Economy - A Comprehensive Study	3
ECO 345	Political Economy of Iraq	3
ECO 357	Econometrics	3
ECO 360	Time Series Analysis	3
ECO 362	Martindale Research Seminar [1]	1-3
ECO 366	Quantitative Market Analysis	3
ECO 367	Applied Microeconometrics	3
ECO 371	Special Topics in Economics [1]	1-3
ECO 389	Honors Project [1]	1-6
Total Credits		**18**

[1]

Students can apply, at most, 3 credits earned in this course toward the elective requirement.

[2]

Only one of the following courses may be used to satisfy the elective requirement: ECO 259, ECO 273, and ECO 274.

COLLEGE OF ARTS AND SCIENCES

B.A. Major in Economics

The B.A. in Economics provides students with a solid grounding in the basic tools and models used in economic analysis. It is meant for students interested in consulting careers, careers in business or public policy, or in pursuing advanced degrees such as law. The requirements are:

Common Economics Core		**10**
ECO 001	Principles of Economics	4
ECO 119	Intermediate Macroeconomic Analysis	3
ECO 146	Intermediate Microeconomic Analysis	3
Quantitative Economics Core		**6**
ECO 045	Statistical Methods	3
or MATH 231	Probability and Statistics	
ECO 157	Statistical Methods II	3
Collateral Requirement		**4**

Select one of the following:

MATH 021	Calculus I	4
or MATH 051	Survey of Calculus I	
or MATH 075 & MATH 076	Calculus I, Part A and Calculus I, Part B	
or MATH 081	Calculus with Business Applications I	
Electives - Field Courses		**9**

Students must take three courses from the following list, at least two at the 300 level:

ECO 209	Comparative Economic Systems	3
ECO 229	Economics of Money and Banking	3
ECO 303	Economic Development	3

ECO 304	Economic Growth	3
ECO 311	Environmental Economics	3
ECO 312	Mathematical Economics	3
ECO 322	Competitor and Market Analysis	3
ECO 338	International Economics	3
ECO 339	International Trade	3
ECO 352	Behavioral Economics	3
ECO 353	Public Economics	3
ECO 358	Game Theory	3
ECO 363	Labor Economics	3
ECO 365	Business, Government, and Macroeconomic Policy	3
ECO 368	Health Economics	3
Electives - Applying Economics		**6**

Students must take two courses from the following list, at least one at the 300 level, earning at least 6 credits overall:

ECO 201	Federal Reserve Challenge Competition [1]	1-3
ECO 203	Inclusive Finance and Economic Development	3
ECO 234	The Economics of Gender and Race	3
ECO 259	Project Evaluation Practicum	3
ECO 273	Community Consulting Practicum	3
ECO 274	Supervised Research [1]	1-3
ECO 301	Econometric Software	3
ECO 314	Energy Economics	3
ECO 324	The Economics of the Sports Industry	3
ECO 325	Consumer Insights through Data Analysis	3
ECO 328	Electricity Economics	3
ECO 333	The Economics of Business Decisions	3
ECO 335	Cost-Benefit Analysis	3
ECO 336	Antitrust, Regulation, and the New Economy	3
ECO 342	The Chinese Economy - A Comprehensive Study	3
ECO 345	Political Economy of Iraq	3
ECO 357	Econometrics	3
ECO 360	Time Series Analysis	3
ECO 362	Martindale Research Seminar [1]	1-3
ECO 366	Quantitative Market Analysis	3
ECO 367	Applied Microeconometrics	3
ECO 369	Analysis of Health Care Markets	3
ECO 371	Special Topics in Economics [1]	1-3
ECO 389	Honors Project [1]	1-6
Electives - Breadth Requirement		**3-4**

Students must take one course from an approved list, earning at least 3 credits. Students should select a class that helps prepare them for some potential area of further study. [2, 3]

Total Credits		**38-39**

[1]

Students can apply at most 3 credits earned in this course toward the elective requirement.

[2]

Potential areas of further study include, but are not limited to, law or some other non-quantitative graduate degree, business, government, or the non-profit sector. **Students are responsible for making sure they have fulfilled any course prerequisites.**

[3]

The approved list includes the following courses: ACCT 108, ACCT 151, CSE 001 & CSE 003 (total of 4 credits), CSE 012 & CSE 003 (total of 4 credits), CSE 003 & CSE 004 (total of 4 credits), CSE 007, ENTP 101, ENTP 304, ENTP/POLS 310, ENTP 315, ES 107, FIN 125, IR 225/POLS 225, IR 222, IR 223, IR 226, LAW 101, MGT 314/ENTP 314, PHIL 172, POLS 103, POLS 109, POLS 306, and TE 211. Please see your Economics Advisor regarding the possible approval of alternate courses which will fulfill this requirement.

COLLEGE OF ARTS AND SCIENCES
B.S. MAJOR IN ECONOMICS

The B.S. in Economics is for students who desire a more robust and technical degree program. Students will take math, computer science, and econometrics, as well as more economics, to better prepare them for technical careers or for graduate work in economics. The requirements are:

Common Economics Core		**10**
ECO 001	Principles of Economics	4
ECO 119	Intermediate Macroeconomic Analysis	3
ECO 146	Intermediate Microeconomic Analysis	3
Quantitative Economics Core		**9**
ECO 045	Statistical Methods	3
or MATH 231	Probability and Statistics	
ECO 157	Statistical Methods II	3
ECO 357	Econometrics	3
Collateral Requirement		**15-16**
MATH 021	Calculus I	4
or MATH 075 & MATH 076	Calculus I, Part A and Calculus I, Part B	
MATH 022	Calculus II	4
or MATH 082	Calculus with Business and Economics Applications II	
MATH 043	Survey of Linear Algebra	3
or MATH 205	Linear Methods	
or MATH 242	Linear Algebra	
Select 4 credits worth of approved CSE courses [3]		4-5
Electives - Field Courses		**12**

Students must take four courses from the following list, at most one at the 200-level:

ECO 209	Comparative Economic Systems	3
ECO 229	Economics of Money and Banking	3
ECO 303	Economic Development	3
ECO 304	Economic Growth	3
ECO 311	Environmental Economics	3
ECO 312	Mathematical Economics	3
ECO 322	Competitor and Market Analysis	3
ECO 338	International Economics	3
ECO 339	International Trade	3
ECO 352	Behavioral Economics	3
ECO 353	Public Economics	3
ECO 358	Game Theory	3
ECO 363	Labor Economics	3
ECO 365	Business, Government, and Macroeconomic Policy	3
ECO 368	Health Economics	3
Electives - Applying Economics		**12**

Students must earn 12 credits by taking at least four courses from the following list, at most two at the 200-level: [2]

ECO 201	Federal Reserve Challenge Competition [1]	1-3
ECO 203	Inclusive Finance and Economic Development	3

ECO 234	The Economics of Gender and Race	3
ECO 259	Project Evaluation Practicum	3
ECO 273	Community Consulting Practicum	3
ECO 274	Supervised Research [1]	1-3
ECO 314	Energy Economics	3
ECO 301	Econometric Software	3
ECO 324	The Economics of the Sports Industry	3
ECO 325	Consumer Insights through Data Analysis	3
ECO 328	Electricity Economics	3
ECO 333	The Economics of Business Decisions	3
ECO 335	Cost-Benefit Analysis	3
ECO 336	Antitrust, Regulation, and the New Economy	3
ECO 342	The Chinese Economy - A Comprehensive Study	3
ECO 345	Political Economy of Iraq	3
ECO 360	Time Series Analysis	3
ECO 362	Martindale Research Seminar [1]	1-3
ECO 366	Quantitative Market Analysis	3
ECO 367	Applied Microeconometrics	3
ECO 369	Analysis of Health Care Markets	3
ECO 371	Special Topics in Economics [1]	1-3
ECO 389	Honors Project [1]	1-6
Total Credits		**58-59**

[1]

Students can apply, at most, 3 credits earned in this course toward the elective requirement.

[2]

Students may substitute one class from outside the Economics Department with approval of their advisor. Substitute classes must be at least at the 200-level.

[3]

Students can choose from the following combinations of courses: (CSE 001 and CSE 003) or (CSE 012 and CSE 003) or (CSE 003 and CSE 004)* or CSE 007*.
*We highly recommend the last two options as CSE 001 will be offered infrequently.

COLLEGE OF ARTS AND SCIENCES
JOINT INTERNATIONAL RELATIONS and ECONOMICS MAJOR

IR-Eco Major **(**http://catalog.lehigh.edu/coursesprogramsandcurricula/artsandsciences/jointirecomajor/**) (60-61 credits)**

This major combines international economics, which is the study of markets and economic policy, with international political economy, which studies international institutions and the interactions of states with those institutions and with each other, motivated by trade-offs among economic goals and considerations of power, national security, and citizen welfare. Study of economic theory, as well as institutional arrangements, allows students to understand political and distributional consequences for the world economy.

HONORS IN ECONOMICS

Economics majors from both the College of Business and the College of Arts and Sciences (CAS) who wish to be considered for departmental honors must consult with their major mentor or advisor and request such consideration by the end of their junior year. To be eligible for departmental honors, a student must have: **a cumulative GPA of 3.5 or better, completed at least three 200-level or 300-level economics courses before beginning the thesis work, and found a faculty member willing to advise the work and another willing to serve as the second reader.** To begin, the student must submit a well-thought-out and well-written thesis proposal to the mentor or advisor. To graduate with honors, the student must submit a written thesis and make an oral presentation of the work. Students fulfilling all requirements of the honors program

will receive credit for ECO 389; these credits may be applied toward the elective requirements of the Economics Major. Interested students should contact the Director of the Economics Honors Program (please contact the Department Coordinator for the Director's contact information).

MINOR IN ECONOMICS

This minor is available to all students in the College of Arts and Sciences (CAS), the Rossin College of Engineering and Applied Science (RCEAS), the College of Health, and intercollegiate programs [such as Integrated Business and Engineering (IBE) and Computer Science and Business (CSB)]. Interested students should contact the Minor Advisor (please contact the Department Coordinator for the Minor Advisor's contact information).

A minor in economics consists of 12 credit hours beyond ECO 001. Required courses in the minor are:

ECO 119	Intermediate Macroeconomic Analysis	3
ECO 146	Intermediate Microeconomic Analysis	3
Two elective courses [1]		6

[1]

Electives must be chosen from among 200-level and 300-level economics offerings, with at least one course being a 300-level elective. None of the following courses -- ECO 201, ECO 259, ECO 273, ECO 274, ECO 301, ECO 362, ECO 371, ECO 389 -- may be used to satisfy the requirement.

Courses
ECO 001 Principles of Economics 0,4 Credits
A one-semester course in the principles of economics. General topics covered are: supply and demand; pricing and production decisions of firms; the role of government in the economy; the determination of national income; money and banking; monetary and fiscal policy; and government finance.
Attribute/Distribution: SS

ECO 045 Statistical Methods 3 Credits
Descriptive statistics, probability and probability distributions, sampling, estimation, hypothesis testing, chi-square tests, simple regression and correlation. Note: College of Business students may not take MATH 012 as a replacement for ECO 045.
Attribute/Distribution: Q

ECO 119 Intermediate Macroeconomic Analysis 3 Credits
Macroeconomic measurement, theory and policy. The use of alternative macroeconomic models to analyze the level of national income, inflation, unemployment, economic growth; the balance of payments, and exchange rate determination.
Prerequisites: ECO 001 and (MATH 021 or MATH 031 or MATH 051 or (MATH 075 and MATH 076) or MATH 081)
Attribute/Distribution: Q, SS

ECO 146 Intermediate Microeconomic Analysis 3 Credits
The application of economic analysis to managerial and public policy decision-making.
Prerequisites: (ECO 001) and (MATH 021 or MATH 031 or MATH 051 or MATH 081 or (MATH 075 and MATH 076),)
Attribute/Distribution: Q, SS

ECO 157 Statistical Methods II 3 Credits
The course is a continuation of Economics 045 that gives broader coverage of linear regression and the construction of empirical models. Topics include the analysis of variance, simple and multiple regression, time series analysis, and forecasting.
Prerequisites: MATH 012 or MATH 231 or ECO 045 or BSTA 001
Attribute/Distribution: Q

ECO 173 Economics Internship 1-3 Credits
Based on a student's work experience, a sponsoring faculty member shall direct readings, projects, and other assignments—including a "capstone report." It should be noted that the work experience (at least 80 hours), by itself, is not the basis for academic credit. Course registration and related arrangements must be made in advance of the work engagement. This course must be taken Pass/Fail, cannot be used to satisfy economics major requirements. Declaration of an economics major and consent of department required.
Prerequisites: ECO 001

ECO 201 Federal Reserve Challenge Competition 1-3 Credits
To prepare for the Federal Reserve Challenge Competition. Course may be repeated for credit. Credits are assigned based on role - 1 credit for 1st time researchers, 2 credits for 2nd time researchers, and 3 credits for speakers. Up to three credits of the course can be counted toward the economics major, but the course cannot count toward the economics minor. Department permission is required for enrollment.
Repeat Status: Course may be repeated.
Prerequisites: ECO 119
Can be taken Concurrently: ECO 119
Attribute/Distribution: Q, SS

ECO 203 Inclusive Finance and Economic Development 3 Credits
Non-technical survey of the global inclusive finance sector, which provides financial services to the poor at large scale, mostly in developing nations. Historical origins and industry evolution. Nature and developmental role of microenterprises and informal finance. Methods and technologies used by microfinance institutions and other inclusive finance providers. Case studies. The lives of clients. Policy and regulatory environments. Debates over profiting from the poor, and over health and environmental goals. Conflicting evidence on economic and social impact. Meetings with practitioners.
Prerequisites: ECO 001
Attribute/Distribution: CC, SS, SW

ECO 209 Comparative Economic Systems 3 Credits
An analysis of the microeconomic and macroeconomic, institutional, and political dimensions of various economic systems, with particular emphasis on centrally planned economies in their transition to a market orientation.
Prerequisites: ECO 001
Attribute/Distribution: SS

ECO 229 Economics of Money and Banking 3 Credits
This course studies the economics of money, banking, interest rates, and monetary policy as they apply to the U.S. and other economies. This course has two main objectives. One is to study the main aspects of banks through their role in financial intermediation and the effects on monetary policy. The second objective is to study the role of money, central banking, and the conduct of monetary policy.
Prerequisites: ECO 001 and ECO 119
Can be taken Concurrently: ECO 119
Attribute/Distribution: Q, SS

ECO 234 The Economics of Gender and Race 3 Credits
In this course, students will explore, through mass media and documentaries, current socioeconomic issues and policies concerning race and gender in the United States and around the globe. Students will employ economic theory at the introductory level and will explore and analyze empirical evidence to complement the theories.
Prerequisites: ECO 001
Attribute/Distribution: CC, SS, SW

ECO 259 Project Evaluation Practicum 3 Credits
Students participate as members in cross-discipline, team-based Integrated Learning Experience (ILE) research projects. The twin purposes of the course are to provide real-world, team-oriented experiential learning opportunities and to apply economic analysis in evaluating the costs and benefits of newly proposed, or renovations and expansions to existing, university facilities and programs.
Prerequisites: ECO 146

ECO 273 Community Consulting Practicum 3 Credits
This course involves teams of students in community-oriented research projects. The twin purposes of the course are to provide real-world, team-oriented learning experiences and to provide a resource for local governments and community organizations that would allow them to draw upon the expertise of our students as consultants in analyzing problems and formulating policy.
Prerequisites: ECO 001
Attribute/Distribution: Q

ECO 274 Supervised Research 1-3 Credits
Apprenticeship in ongoing faculty research program. Literature review, experimental design, data collection and analysis, and professional writing under faculty supervision. Consent of faculty sponsor required.
Repeat Status: Course may be repeated.
Prerequisites: ECO 119 or ECO 146 or ECO 157
Attribute/Distribution: Q

ECO 300 Apprentice Teaching 1-3 Credits

ECO 301 Econometric Software 3 Credits
The fundamentals of data management and analysis using statistical software, such as Stata and/or SAS. Students will develop data management and programming skills using the Stata or SAS system. An introduction to R and basic programming in R will be included as well. Working with big data will provide hands-on, practical experience. Upon completion of this course, students will be able to manage data to boost their research and analysis skills.
Attribute/Distribution: Q

ECO 303 Economic Development 3 Credits
Economic development, economic growth and their political environment are discussed in detail. The principal economic development theories are examined. These theories are used to examine a variety of development issues including planning, poverty, rural-urban relationships, physical and human capital accumulation, international trade, and the environment. Emphasis on institutions and development policy.
Prerequisites: ECO 119 or ECO 146
Attribute/Distribution: CC, SS, W

ECO 304 Economic Growth 3 Credits
A theoretical and empirical examination of economic growth and income differences between countries. The course focuses on both the historical experience of countries that are currently rich and the process of catch-up among poorer countries. Topics include population growth, the accumulation of physical and human capital, technological change, natural resources, income distribution, geography, government and culture. The course will involve extensive mathematical, analytical, verbal, and communication skills, those typical of any rigorous upper-level undergraduate economics course.
Prerequisites: ECO 119
Attribute/Distribution: CC, SS, W

ECO 311 Environmental Economics 3 Credits
Resource allocation implications of environmental degradation. Analysis of the benefits and costs associated with alternative pollution control programs and strategies.
Prerequisites: ECO 146
Attribute/Distribution: CC, Q, SS

ECO 312 Mathematical Economics 3 Credits
Applications of various mathematical techniques in the formation and development of economic concepts and theories. Students cannot receive credit for both ECO 312 and ECO 412.
Prerequisites: ECO 146 and MATH 022
Attribute/Distribution: Q

ECO 314 Energy Economics 3 Credits
The economic theory of natural resource allocation over time. Economics of exhaustible and renewable resources. Environmental effects of energy production and consumption. Government regulation of the energy industry. Computer models for energy system forecasting and planning.
Prerequisites: ECO 146
Attribute/Distribution: CC, Q, SS

ECO 322 Competitor and Market Analysis 3 Credits
Firms that compete with only a few other firms in a market must behave strategically. In this course we first examine different models of price and output decisions in imperfectly competitive markets. We then study other decisions that shape the structure of a market over time, including strategic entry barriers, mergers, vertical relations, product differentiation, R&D decisions, and competition among networks and two-sided platforms. Students use both game theoretic models and cases to analyze these interactions.
Prerequisites: ECO 146
Attribute/Distribution: Q, SS

ECO 324 The Economics of the Sports Industry 3 Credits
This course analyzes the role of basic economic forces in shaping today's sports industry. Topics include: competition in the market for professional franchises; public subsidies for stadiums and arenas; compensation of professional athletes; the NCAA as an economic enterprise; and the impact of athletics on a university's budget.
Prerequisites: ECO 146 and (ECO 045 or MATH 012 or MATH 231 or ISE 111)
Attribute/Distribution: Q, SS

ECO 325 (MKT 325) Consumer Insights through Data Analysis 3 Credits
Explores marketing analytic approaches aimed at improving the understanding of customers and customers' perceptions, thereby enhancing the effectiveness of marketing decision-making and implementation. Foundational data analysis techniques are examined in such areas as advertising, customer acquisition and retention (customer relationship management), segmentation, customer loyalty, lifetime-value analysis of the customer, pricing, sales force management, sales promotions, and new products. The development, implementation, and utilization of quantitative models on customer data are emphasized. Prerequisites as noted below.
Prerequisites: MKT 111 and ECO 146

ECO 328 (ECE 328) Electricity Economics 3 Credits
The course is intended primarily for students who are interested in an exploration of electricity markets around the world, risk management, operation, and the main considerations in the wake of a smart grid implementation as well as in the transition to a low carbon economy.
Repeat Status: Course may be repeated.
Prerequisites: ECO 001 and (MATH 023 or ECO 146)
Attribute/Distribution: CC, Q, SS

ECO 333 The Economics of Business Decisions 3 Credits
Students analyze business problems using economic logic and techniques like mathematical programming, marginal analysis, and decision making under risk and uncertainty. New topics like asymmetric information and the analysis of organizations are introduced. Case studies are emphasized.
Prerequisites: ECO 146 and (ECO 045 or MATH 012 or MATH 231 or ISE 111) and (MATH 021 or MATH 031 or MATH 051 or MATH 081 or (MATH 075 and MATH 076),)
Attribute/Distribution: Q, SS, W

ECO 335 Cost-Benefit Analysis 3 Credits
Theory and methods of cost-benefit analysis; efficiency and equity as criteria in program evaluation; rationale(s) for government intervention in free market economies; proper measurement of market and non-market costs and benefits; consideration of risk, uncertainty, appropriate discounting techniques and distributional consequences.
Prerequisites: ECO 146
Attribute/Distribution: Q, SS

ECO 336 Antitrust, Regulation, and the New Economy 3 Credits
Analyzes government responses to market power by examining antitrust policy and the regulation of natural monopoly. Focus in antitrust is on price-fixing, mergers, and dominant firms, and includes an introduction to the economics of platforms that highlights the new challenges they present. Analysis of regulation is focused on the problem of setting prices for a natural monopoly, on theories of regulation, and on the difficulties of deregulating.
Prerequisites: ECO 146
Attribute/Distribution: CC, Q, SS

ECO 338 International Economics 3 Credits
In trade (applied micro) graphical and mathematical analysis will be used to understand: why countries trade and the income-distributional effects; the gains from trade; the effects of government policies; and the reasons underlying the formation of trading blocs (e.g., TPP). In finance (applied macro) we will: examine the balance-of-payments accounts; develop international financial linkages (e.g., uncovered interest parity) and several exchange-rate models (e.g., the law of one price); and use models to understand macro policy-making in an open economy.
Prerequisites: (ECO 119 or ECO 229) and ECO 146
Attribute/Distribution: Q, SS

ECO 339 International Trade 3 Credits
The theory of international trade; the theory of tariffs; United States commercial policies; the impact of growth and development of the world economy.
Prerequisites: ECO 146
Attribute/Distribution: Q, SS

ECO 340 International Finance 3 Credits
The monetary side of an open economy and the financial transactions that accompany trade in goods and services. Macroeconomic links among participants in the global economy; currency and financial crises illustrate how difficult it is for countries to remain insulated from external shocks. Topics include: balance-of-payments accounting; exchange-rate models; and macroeconomic policies under different exchange-rate regimes and capital-mobility assumptions.
Prerequisites: ECO 119
Attribute/Distribution: Q, SS

ECO 342 The Chinese Economy - A Comprehensive Study 3 Credits
This course delves into the transformation of the Chinese economy, tracing its evolution from its pre-1978 foundations to the present. Through a universal analytical framework, students will explore key facets such as urban-rural dynamics, income inequalities, technological influences, and financial systems. The curriculum provides a foundation for critically assessing the sustainability of economic growth, applicable not just to China but to global economies at large.
Prerequisites: ECO 119 or ECO 146
Attribute/Distribution: Q, SS

ECO 345 Political Economy of Iraq 3 Credits
An examination of the economic, political and social forces at work in Iraq with emphasis on the post-2002 period. Major topics include recent history and culture, petroleum production and transport, corruption, agricultural transition, rural-urban divergence, unemployment, poverty, the economic and political role of the state owned enterprises, entrepreneurship and the informal economy, banking, and monetary, exchange rate, and fiscal policies.
Prerequisites: ECO 119 or ECO 303 or ECO 304 or IR 225
Attribute/Distribution: CC, SS

ECO 352 Behavioral Economics 3 Credits
The study of human behavior in economic contexts incorporating ideas from Psychology and other disciplines. Covers both theory and applications. Topics include non-standard preferences (e.g., loss-aversion), decisions under risk, intertemporal choices, heuristics and biases, and more.
Prerequisites: ECO 146 and (ECO 157 or ECO 357)
Attribute/Distribution: Q, SS, W

ECO 353 Public Economics 3 Credits
A course on the economic analysis of government. Major topics include the theory of public goods, the economics of taxation, the design of tax structures, externalities, and social insurance.
Prerequisites: ECO 146
Attribute/Distribution: Q, SS, W

ECO 357 Econometrics 3 Credits
Problems in construction, evaluation and use of econometric models. Applications based on research and case studies.
Prerequisites: (ECO 119 or ECO 146) and (BSTA 101 or ECO 157)
Attribute/Distribution: Q

ECO 358 Game Theory 3 Credits
This course introduces students to a set of tools that economists, among others, use to analyze strategic interactions among individuals, firms, nations, etc. The coverage of theories begins with single-person decision-making and extends to games (multi-person interactive decision-making) under various strategic and informational environments. Theories will be supplemented with a variety of applications, which include competitive pricing in oligopolistic markets, tragedy of the commons, bidding behavior in auctions, bargaining, voting and electoral competition, and strategic use and transmission of information.
Prerequisites: ECO 146 and (MATH 021 or MATH 031 or MATH 051 or MATH 081 or (MATH 075 and MATH 076),)
Attribute/Distribution: CC, Q, SS

ECO 360 Time Series Analysis 3 Credits
This course provides an introduction to time series analysis as it is applied in macroeconomics and finance. The class will emphasize hands-on implementation of macroeconometric and time series models for macroeconomic, financial, and policy analysis. Topics include macroeconomic data, linear and nonlinear univariate time series models, practical issues with likelihood-based inference in time series models, forecasting, multivariate models, and structural identification in multivariate models.
Prerequisites: ECO 157
Attribute/Distribution: Q

ECO 362 Martindale Research Seminar 1-3 Credits
This course prepares students to undertake research on various topics in business and/or economics. Admission to this course is limited to student associates of the Martindale Center for the Study of Private Enterprise. Consent of the instructor is required. This course does not count towards an Economics Minor. For this course to be counted toward the Economics Major, department permission is required.
Repeat Status: Course may be repeated.
Attribute/Distribution: W

ECO 363 Labor Economics 3 Credits
The economic analysis of labor markets, with emphasis on labor supply and demand, wage and employment theory, and human capital. Further topics include the economics of discrimination, anti-poverty policies, and immigration. Students cannot receive credit for both ECO 235 and ECO 363.
Prerequisites: ECO 146
Attribute/Distribution: Q, SS

ECO 365 Business, Government, and Macroeconomic Policy 3 Credits
The course explores topics in applied macroeconomics, with emphasis on analyzing macroeconomic policy. Topics may include business cycles, fiscal and monetary policies, economic growth, consumption and saving decisions, exchange rate determination, and applicable empirical methods.
Prerequisites: ECO 229 or ECO 119
Attribute/Distribution: Q, SS

ECO 366 Quantitative Market Analysis 3 Credits
The course covers the application of empirical approaches to theoretical frameworks in the analysis of market structure, firm strategies, and consumer behavior. Students learn econometric methods to identify causal relationships, and the course emphasizes the role of theoretical models in developing hypotheses and interpreting data. The course covers methods of field experiments and causal inference using non-experimental data. Topics include pricing and market conduct, demand analysis, marketing, and online marketplaces. Basic knowledge of microeconomic theory and econometrics is required.
Prerequisites: ECO 146 and (ECO 157 or ECO 357)
Attribute/Distribution: Q

ECO 367 Applied Microeconometrics 3 Credits
An empirical class with concentration in Applied Microeconometrics. Its goal is to give you knowledge (various econometrics methods) and a tool (Stata) to solve real-life problems.
Prerequisites: ECO 357 or ECO 157
Attribute/Distribution: Q

ECO 368 Health Economics 3 Credits
Supply and demand in the U.S. health service market. Unique features of health care which interfere with competitive market allocation and pricing. Overview of insurance systems and other payment methods.
Prerequisites: (ECO 045 or MATH 012 or MATH 231) and ECO 146
Attribute/Distribution: Q, SS

ECO 369 Analysis of Health Care Markets 3 Credits
The economic analysis of health care supply in the U.S. This course focuses on provider behavior, market competition, and financing. Students will learn how the supply side interacts with health insurers, the government, and consumers to determine market outcomes, including the price, quantity, and quality of health care. The course emphasizes the role of public policy in shaping supply-side provider decisions and influencing market competition among providers.
Prerequisites: ECO 146 and (ECO 045 or MATH 012 or MATH 231 or BSTA 001)
Attribute/Distribution: Q, SS

ECO 371 Special Topics in Economics 1-3 Credits
Study in various fields of economics, designed for the student who has a special interest in a subject not included in the regular course schedule or for the student interested in pursuing a significant supervised research project in economics. Students interested in enrolling in this course must submit a written proposal to a member of the faculty with expertise in the proposed subject area and to the department chair prior to the registration period for the relevant semester.
Repeat Status: Course may be repeated.
Prerequisites: ECO 146 or ECO 119
Attribute/Distribution: SS

ECO 389 Honors Project 1-6 Credits
Independent research under faculty supervision, culminating in a thesis presented for departmental honors.
Repeat Status: Course may be repeated.
Attribute/Distribution: Q, SS, W

ECO 402 Managerial Economics 3 Credits
Application of economic and statistical analysis to managerial decision-making. Business and economic forecasting. Empirical estimation of demand, production, and cost functions. Resource allocation and pricing strategies in various market structures. Decisions under risk and uncertainty. Government regulation of business cases.
Prerequisites: MATH 021 and (MATH 022 or MATH 096) and ECO 401

ECO 403 Econometric Software 3 Credits
The fundamentals of data management and analysis using statistical software, such as Stata and/or SAS. Students will develop data management and programming skills using the Stata or SAS system. An introduction to R and basic programming in R will be included as well. Working with big data will provide hands-on, practical experience. Upon completion of this course, students will be able to manage data to boost their research and analysis skills.

ECO 404 Applied Microeconometrics 3 Credits
The purpose of this course is to expose students to econometric techniques frequently used in applied microeconomic research. The course features critical reading of empirical research papers and the implementation of econometric methods on actual data sets.

ECO 409 Money, Banking and Macroeconomic Analysis 2 Credits
The role of financial intermediation in the U.S. economy, the process of money creation, impacts of fiscal and/or monetary policy on the goals of macroeconomic policy, inflation and unemployment.

ECO 412 Mathematical Economics 3 Credits
Applications of various mathematical techniques in the formation and development of economic concepts and theories. Consent of instructor required.

ECO 413 Advanced Microeconomics Analysis 3 Credits
A survey of methods of decision-making at the microeconomic level; price theory and econometric applications.

ECO 414 Advanced Topics in Microeconomics 3 Credits
Resource allocation and price determination. Theories of choice of consumers, firms, and resource owners under various market forms.
Prerequisites: ECO 413

ECO 415 Econometrics I 3 Credits
Computer applications of standard econometric techniques using regression analysis in a single-equation context. Discussion of problems of multicollinearity, heteroscedasticity and autocorrelation. An introduction to simultaneous equation models, identification and estimation problems.

ECO 416 Econometrics II 3 Credits
Mathematical and statistical specification of economic models. Statistical estimation and tests of parameters in single and multiple equation models. Prediction and tests of structural change.
Prerequisites: ECO 415

ECO 417 Advanced Macroeconomic Analysis 3 Credits
This course aims to familiarize students with the current research in modern empirical macroeconomics, with emphasis on the intersection of theoretical models and macroeconomic policy analysis.

ECO 418 Advanced Topics in Macroeconomics 3 Credits
Models of employment, income and growth in monetary economies. Policies for economic stability and growth.
Prerequisites: ECO 417

ECO 425 Cost-Benefit Analysis 3 Credits
Theory and methods of cost-benefit analysis; efficiency and equity as criteria in program evaluation; rationale(s) for government intervention in free market economies; proper measurement of market and non-market costs and benefits; consideration of risk, uncertainty, appropriate discounting techniques and distributional consequences.
Prerequisites: ECO 402 and ECO 415

ECO 427 Statistical Analysis for Management 2 Credits
Descriptive statistical measures, probability and probability distributions, statistical inference (estimation and hypothesis testing), correlation and regression. EXCEL will be used for statistical computing.

ECO 428 (ECE 428) Electricity Economics 3 Credits
Course focuses on the intersection between economics & electricity systems, and market structures available in the electric energy industry. Background provided on basic economic theory applied to power systems to understand operations objectives, pricing & incentives, as well as non-perfect competition situations that arise in the network. Different dispatch optimization problems used in electricity market restructuring, approaches to solving these, and the existence of non-convex markets will be discussed. Credit will not be given for both ECO/ECE328 and ECO/ECE428.

ECO 430 Public Finance 3 Credits
The economics of public spending and taxation; principles of government debt management; theories of budgeting and cost-benefit analysis and public choice.

ECO 431 Quantitative Market Analysis 3 Credits
The course covers the application of empirical approaches to theoretical frameworks in the analysis of market structure, firm strategies, and consumer behavior. Students learn econometric methods to identify causal relationships, and the course emphasizes the role of theoretical models in developing hypotheses and interpreting data. The course covers methods of field experiments and causal inference using non-experimental data. Topics include pricing and market conduct, demand analysis, marketing, and online marketplaces. Students cannot receive credit for both ECO 366 and ECO431.

ECO 440 Labor Economics I 3 Credits
The economics of labor markets and various labor-market institutions with emphasis on current theoretical and empirical research. Topics include labor supply and demand, human capital, the structure of labor markets, labor market regulation, information and job search, labor mobility, unionism, and labor market discrimination.
Prerequisites: ECO 401 and ECO 402

ECO 441 Labor Economics II 3 Credits
An examination of empirical research in labor economics, focusing on topics such as human resource management and internal labor market outcomes, wage and income inequality, and poverty, unemployment, and other issues current in the literature.
Prerequisites: ECO 415

ECO 447 Economic Analysis of Market Competition 3 Credits
Mathematical models based on game theory and industrial organization. Cases are used to analyze the strategic interaction of firms and governments as competitors and partners.
Prerequisites: ECO 402

ECO 448 Business Economics 3 Credits
Applications of economic analysis to business decision-making; technology in economic systems; resource allocation and pricing strategies in various market structures; decisions under risk and uncertainty; and government regulation and support of business and innovation.

ECO 452 Behavioral Economics 3 Credits
The study of human behavior in economic contexts incorporating ideas from Psychology and other disciplines. Covers both theory and applications. Topics include non-standard preferences (e.g., loss-aversion), decisions under risk, intertemporal choices, heuristics and biases, and more.

ECO 455 Health Economics I 3 Credits
Economic theory and empirical analysis of health production, the demand for health services, and health insurance. Implications for the current institutional structure of health care and health delivery systems will also be discussed. Additional topics and extensions will be selected based on developments in the literature.
Prerequisites: ECO 416

ECO 456 Industrial Organization 3 Credits
The goal of the course is to review theoretical and empirical attempts by economists to understand market structures lying between the extremes of perfect competition and monopoly. The course will focus first on describing the current U.S. industrial structure and reviewing models of imperfect competition. The course then shifts to a closer study of individual firm behavior. The final segment of the course is an overview of two significant relationships between government and industry caused by the existence of imperfect.
Prerequisites: ECO 415 and ECO 447

ECO 460 Time Series Analysis 3 Credits
Classical decomposition of time series, trend analysis, exponential smoothing, spectral analysis and Box-Jenkins autoregressive and moving average methods.

ECO 463 Topics in Game Theory 3 Credits
A mathematical analysis of how people interact in strategic situations. Topics include normal-form and extensive-form representations of games, various types of equilibrium requirements, the existence and characterization of equilibria, and mechanism design. The analysis is applied to micro-economic problems including industrial organization, inter-national trade, and finance.

ECO 464 Applied Econometrics I 3 Credits
This course focuses on the identification of causal relationships using cross-sectional and panel data. The objectives are to 1) familiarize students with identification assumptions for causal inference; and 2) enable students to select appropriate econometric tools for empirical economic problems and policy evaluation.Topics include robust inference and bootstrap; instrumental variables and generalized method of moments (GMM); quantile and nonparametric regression methods; treatment effect analysis, and models for discrete choices, panel data, and social interactions.
Prerequisites: ECO 416

ECO 465 Applied Econometrics II 3 Credits
Econometric analysis of skewed and truncated distributions, discrete outcomes, and missing or incomplete data. The first part of this course will involve the functional specification and testing of appropriate estimators in these situations, while the second part of the course will focus on conducting causal inference using nonlinear models in the presence of unobserved heterogeneity. Emphasis will be given to common applications in health and labor economics.
Prerequisites: ECO 416

ECO 466 Health Economics II 3 Credits
Selected topics in the literature on health economics with an emphasis on the application and evaluation of econometric techniques and identification strategies. Both demand and supply side issues will be addressed. Examples of the former include the demand for health, health insurance and health care services, while examples of the latter include the regulation of supplier behavior and industrial organization issues.
Prerequisites: ECO 416

ECO 490 Master's Thesis 1-6 Credits
Master's Thesis.

ECO 492 Special Topics in Economics 1-3 Credits
Extended study of an approved topic not covered in scheduled courses.
Repeat Status: Course may be repeated.

ECO 493 Doctoral Pre-Dissertation Research Project - Independent Study 1-9 Credits
Independent study on a topic that is being pursued to fulfill the third year paper requirement, and has been approved by the student's interim advisor.

ECO 499 Dissertation 1-15 Credits
Repeat Status: Course may be repeated.