**ECONOMICS (ECON)**

**ECON 001 Introduction to Micro Economics**
Introduction to economic analysis and its application. Theory of supply and demand, costs and revenues of the firm under perfect competition, monopoly and oligopoly, pricing of factors of production, income distribution, and theory of international trade. Econ 1 deals primarily with microeconomics.
For BA Students: Society Sector
One-term course offered either term
Activity: Recitation
1 Course Unit

**ECON 002 Introductory Economics: Macro**
Introduction to economic analysis and its application. An examination of a market economy to provide an understanding of how the size and composition of national output are determined. Elements of monetary and fiscal policy, international trade, economic development, and comparative economic systems.
For BA Students: Society Sector
One-term course offered either term
Prerequisite: ECON 001
Activity: Recitation
1 Course Unit

**ECON 010 Introduction to Economics for Business**
The first part of the course covers basic microeconomic concepts such as opportunity cost, comparative advantage, supply and demand, importance of costs and revenues under perfect competition vs. monopoly, externalities and public goods. The second part of the course introduces macroeconomic data, two models of the labor market, a model of the aggregate household, and the standard AD-AS model. The course concludes with an introduction to fiscal policy, banking, and the role of the Central Bank.
Course usually offered in fall term
Activity: Recitation
1 Course Unit
Notes: For Wharton students only

**ECON 013 Strategic Reasoning**
This course is about strategically interdependent decisions. In such situations, the outcome of your actions depends also on the actions of others. When making your choice, you have to think what the others will choose, who in turn are thinking what you will be choosing, and so on.
Game Theory offers several concepts and insights for understanding such situations, and for making better strategic choices. This course will introduce and develop some basic ideas from game theory, using illustrations, applications, and cases drawn from business, economics, politics, sports, and even fiction and movies. Some interactive games will be played in class. There will be little formal theory, and the only prerequisites are some high-school algebra and having taken ECON 001. However, general numeracy (facility interpreting and doing numerical graphs, tables, and arithmetic calculations) is very important. This course will also be accepted by the Economics department as an Econ course, to be counted toward the minor in Economics (or as an Econ elective).
One-term course offered either term
Also Offered As: PPE 311
Prerequisites: ECON 001, some high school algebra
Activity: Lecture
1 Course Unit
Notes: This course may NOT be taken concurrently or after ECON 212.

**ECON 014 American Capitalism**
A broad overview of American economic history will be provided by focusing on the following topics: colonial trade patterns, the growth of the market economy, the political economy of slavery, industrial expansion, segmentation in the labor force and changes in work, technological and organizational innovations, business cycles, the rise of the corporate welfare state, the growth of monopoly capitalism, and current economic problems in historical perspective.
For BA Students: Society Sector
One-term course offered either term
Also Offered As: HIST 161
Prerequisites: ECON 001, 002 or ECON 010
Activity: Recitation
1 Course Unit

**ECON 024 Development Economics**
This course presents an overview of the field of development economics. The general aim is to show how economic analysis has been applied to issues related to developing countries. Among the topics covered are: income distribution, poverty, health, population growth, migration, growth, and the rural economy.
One-term course offered either term
Prerequisite: ECON 001 or ECON 010
Activity: Lecture
1 Course Unit
Notes: Students may NOT take ECON 024 and 261

**ECON 028 Financial Meltdown, Past and Present**
Economic history is increasingly recognized as a crucial source of policy advice and is invoked with growing frequency in public debates. In particular, the subprime crisis in 2008 and after has generated a demand for "historical perspective" that would improve the understanding of the causes of financial turmoil and facilitate the prevention of comparable catastrophes. This course begins with a review of the principal features of the subprime crisis of 2008 and asks, so to speak, "how did we get there?" It answers by providing historical insights that shed light on crucial aspects of financial disasters.
For BA Students: Humanities and Social Science S
Taught by: Flandreau
One-term course offered either term
Also Offered As: HIST 131
Prerequisites: ECON 001, 002, or ECON 010
Activity: Lecture
1 Course Unit

**ECON 030 Public Policy Analysis**
This course provides an introduction to the economic method for analyzing public policy questions. It develops the implications of this method for the role of government in a market economy and for the analysis of specific public projects.
One-term course offered either term
Prerequisites: ECON 001, 002 or ECON 010
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 030 and 231.
ECON 032 Political Economy
This course examines the effects of strategic behavior on political outcomes and government policies. Topics and applications may include voting behavior, candidate competition, voting systems, social choice and welfare, policy divergence, redistributive policies and theories of political transitions.
One-term course offered either term
Prerequisites: ECON 001, 002, or ECON 010
Activity: Lecture
1 Course Unit
Notes: Credit will NOT be given for ECON 032 and ECON 232

ECON 033 Labor Economics
The course begins with an extensive discussion of models of labor market demand and supply. The rest of the course addresses a variety of related topics including the school-to-work transition, job training, employee benefits, the role of labor unions, discrimination, workforce diversity, poverty, and public policy.
Course usually offered in spring term
Prerequisite: ECON 001 or ECON 010
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 033 and ECON 233.

ECON 035 Industrial Organization
Theories of various industrial organizational structures and problems are developed, including monopoly, oligopoly, moral hazard and adverse selection. These theories are then applied to the study of various industries, antitrust cases, and regulatory issues.
One-term course offered either term
Prerequisite: ECON 001 or ECON 010
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 035 and 235.

ECON 036 Law and Economics
The relationship of economic principles to law and the use of economic analysis to study legal problems. Topics will include: property rights and intellectual property; analysis of antitrust and economic analysis of legal decision making.
One-term course offered either term
Also Offered As: PPE 036
Prerequisite: ECON 001 or ECON 010
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 036 and ECON 234.

ECON 039 Economics and Financing of Health Care Delivery
Systematic and critical review of the present economic literature on the health care "industry". Topics include the demography and determinants of illness, the demand for curative and preventive care and determinants of recent health cost inflation, the efficacy of markets, and the role of government.
Course usually offered in fall term
Also Offered As: HCMG 202
Prerequisites: ECON 001 or ECON 010 or permission of instructor.
Activity: Lecture
1 Course Unit

ECON 050 International Economics
Introduction to the theory of international trade and international monetary economics. The theoretical background is used as a basis for discussion of policy issues. Patterns of international trade and production; gains from trade; tariffs, and impediments to trade; foreign exchange markets, balance of payments, capital flows, financial crises, coordination of monetary and fiscal policy in a global economy.
One-term course offered either term
Prerequisites: ECON 001, 002, or ECON 010
Activity: Lecture
1 Course Unit
Notes: ECON 050 is a one-semester course in international economics. Students wishing to study the subject in greater depth should take instead the two-semester sequence ECON 251, 252.

ECON 101 Intermediate Microeconomics
Theories of consumer behavior, demand, production, costs, the firm in various market contexts, factor employment, factor incomes, elementary general equilibrium, and welfare.
One-term course offered either term
Prerequisites: ECON 001, 002; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: Note: Incoming freshmen with AP or transfer credit for ECON 001 and ECON 002, MUST complete MATH 104, MATH 114 or MATH 115 before enrolling in ECON 101. Upper classmen must have at least a B+ in MATH 104 to take ECON 101 and MATH 114 or MATH 115 concurrently.

ECON 102 Intermediate Macroeconomics
Facts and theories about the determination of per capita income and its differences across countries and across time. The study of economic fluctuations in output and employment. The role of government in influencing these aggregate variables: monetary and fiscal policy.
One-term course offered either term
Prerequisites: ECON 001, 002, 101; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: FNCE 101 does not satisfy any of the Economics department requirements. Therefore, students are required to take ECON 102.

ECON 103 Statistics for Economists
The course focuses on elementary probability and inferential statistical techniques. The course begins with a survey of basic descriptive statistics and data sources and then covers elementary probability theory, sampling, estimation, hypothesis testing, correlation, and regression. The course focuses on practical issues involved in the substantive interpretation of economic data using the techniques of statistical inference. For this reason empirical case studies that apply the techniques to real-life data are stressed and discussed throughout the course, and students are required to perform several statistical analyses of their own.
One-term course offered either term
Prerequisites: ECON 001, 002, or ECON 010; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: Intended primarily for economics majors. ECON 103 cannot be taken by any student who has already completed Statistics at least at the level of STAT 430 (including the sequence STAT 430 and 431). Such students must take an additional 200-level course to satisfy course requirements of the major.
ECON 104 Econometrics
This course is designed to introduce students to econometric techniques and their applications in economic analysis and decision-making. The main objective of the course is to train the student in (i) handling economic data; (ii) quantitative analyses of economic models with probabilistic tools; (iii) econometric techniques, their application as well as their statistical and practical interpretation; (iv) implementing these techniques on a computer. Estimation and inference procedures are formally analyzed for simple econometric models and illustrated by empirical case studies using real-life data. The course covers linear regression models, simultaneous-equations models, discrete choice models and univariate time series models. Estimation and Inference is conducted using least squares and likelihood based techniques. Students are required to perform several econometric analyses of their own.
Course usually offered in spring term
Prerequisites: ECON 101, 103; MATH 104, MATH 114 or MATH 115 or permission from instructor.
Activity: Lecture
1 Course Unit

ECON 199 Independent Study
Individual study and research under the direction of a member of the Economics Department faculty. At a minimum, the student must write a major paper summarizing, unifying, and interpreting the results of the study. This is a one semester, one c.u. course.
One-term course offered either term
Prerequisites: ECON 101, 102, 103 or written permission from the Director of Independent Research. Please see the Undergraduate Coordinator in Economics (160 McNeil) for the permission form.
Activity: Independent Study
1 Course Unit
Notes: Please see the Undergraduate Coordinator in Economics (160 McNeil) for the appropriate sequence number.

ECON 210 Economics of Family
This course will use economic tools to explore decision making and allocation of resources within the family. The course will use both economic theory and econometric evidence to investigate these issues. The impact of gender roles and differences will be examined and the effect of these differences on economic decisions and outcomes both within and outside the family will be discussed. Student participation will be an integral part of the course. During class, students will be required to evaluate data and relate it to the theoretic model covered. Student participation will also include two in-class oral presentations. Students will be working with CWiC (Communication Within the Curriculum) as they work on these presentations.
Course not offered every year
Prerequisites: ECON 101; MATH 104, MATH 114 or MATH 115.
Activity: Lecture
1 Course Unit
Notes: In addition, any 200-level evening course (Section 601), when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 211 Social Choice Theory
This course investigates a topic which lies at the heart of economic, social and political sciences, namely the aggregation of individual preferences. Can a society as a whole exhibit preferences as individuals do? Can these preferences be based on individual ones, and show the same level of coherence? Which process can lead from individual preferences to the preferences of the society? At the end of the 18th century, the pioneers in the field already realized that mathematics is the only language powerful enough to make deep progress in the understanding of these questions. The formalization involves pure logic as well as geometry and combinatorics.
Course not offered every year
Prerequisites: ECON 101; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: In addition, any 200-level LPS course (Section 601), when offered, MAY NOT count for Economics Majors, unless you are officially registered as an LPS student.

ECON 212 Game Theory
An introduction to game theory and its applications to economic analysis. The course will provide a theoretical overview of modern game theory, emphasizing common themes in the analysis of strategic behavior in different social science contexts. The economic applications will be drawn from different areas including trade, corporate strategy and public policy.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: Any 200-level LPS course when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 221 Econometric Forecasting
This course provides a comprehensive introduction to forecasting in economics and business. Topics covered include statistical graphics, trends, seasonality, cycles, forecast construction, forecast evaluation and forecast combination.
One-term course offered either term
Prerequisites: ECON 101, 102, 103, 104; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: In addition, any 200-level CGS course (Section 601), when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 222 Advanced Econometric Techniques and Applications
This course introduces students to advanced study in econometrics, with an emphasis on methods used in microeconomic applications and in evaluating the effects of social interventions. The methods covered include methods for handling limited dependent variables (useful, for example, in forecasting the demand for a new good), maximum likelihood estimators, and flexible semiparametric and non parametric estimation methods, and randomized and nonexperimental methods of estimating treatment effects. Applications of econometrics to the field of program evaluation will also be studied.
One-term course offered either term
Prerequisites: ECON 101, 104; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: In addition, any 200-level LPS course, when offered WILL NOT count for Economics Majors unless you are officially registered as an LPS student.
ECON 224 Statistical Learning and Causal Inference for Economics
ECON 224 is an applied data analysis course that introduces students to ideas from modern statistical learning and causal inference, and provides hands-on experience applying them to real-world problems using the R statistical programming language. Topics include regression, randomized controlled trials, classification, instrumental variables, shrinkage methods, random forests, regression discontinuity, and differences-in-differences.
Taught by: DiTraglia
Prerequisite: ECON 103
Activity: Lecture
1 Course Unit

ECON 231 Public Finance
This course has two parts. The first looks at market and government failures and discusses the need for public policies as well as limits to their effectiveness including the evaluation of public projects using cost benefit analysis. The second part focuses on the economic analysis of taxation, including the economic incidence and efficiency of taxes.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115; ECON 103 is recommended.
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 030 and 231

ECON 232 Political Economy
This course examines the political and economic determinants of government policies. The course presents economic arguments for government action in the private economy. How government decides policies via simple majority voting, representative legislatures, and executive veto and agenda-setting politics will be studied. Applications include government spending and redistributive policies.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115; ECON 103 is recommended.
Activity: Lecture
1 Course Unit
Notes: For ECON majors only. Intermediate Micro is a prerequisite and this course will use advanced quantitative methods.

ECON 233 Labor Economics
Labor supply and labor demand, income distribution, labor market contracts and work incentives, human capital, labor market discrimination, job training and unemployment.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115; ECON 103 is recommended.
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 033 and 233.

ECON 234 Law and Economics
This course will use basic microeconomic tools to understand how the law often, but not always, promotes economic efficiency. Among the areas to be discussed will be tort law, property law, intellectual property, antitrust regulation. The distinction between common law and legislative law will be drawn.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, MATH 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 036 and 234.

ECON 235 Industrial Organization
Theories of various industrial organizational structures and problems are developed, including monopoly, oligopoly, nonlinear pricing and price discrimination. These theories are used to model various industries, antitrust cases, and regulatory issues.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115; ECON 103 is recommended.
Activity: Lecture
1 Course Unit
Notes: Credit cannot be received for both ECON 035 and 235

ECON 236 Health Economics
In this course we will use the tools of microeconomics to analyze the functioning of the health care system. We will draw from the sub-disciplines of information economics, industrial organization, labor economics, public economics, and behavioral economics. The primary goal is to use these tools to develop a critical analysis of the functioning of the health care system as well as of the policies aimed at improving it. We will learn about US specific institutional details and policies (most notably the Affordable Care Act), and we will compare them to other important international experiences.
One-term course offered either term
Prerequisites: ECON101; MATH 104, 114 or MATH 115. Wharton students can satisfy the ECON 101 prerequisite with BEPP 250 honors. The regular BEPP 250 course does not count as a substitute for ECON 101.
Activity: Lecture
1 Course Unit

ECON 237 Urban Fiscal Policy
The purpose of this course is to examine the financing of governments in the urban economy. Topics to be covered include the causes and consequences of the urban fiscal crisis, the design of optimal tax and spending policies for local governments, funding of public infrastructures and the workings of the municipal bond market, privatization of government services, and public financial systems for emerging economies. Applications include analyses of recent fiscal crises, local services and taxes as important determinants of real estate prices, the infrastructure crisis, financing and the provision of public education, and fiscal constitutions for new democracies using South Africa as an example.
One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
ECON 238 Economics of Education
The course focuses on the educational decisions, including individual choices, institutional strategies and government policies. It is an elective course in economics and it is designed for junior and senior students. During the first part of the course we will go over the mathematical and empirical tools needed to understand and perform quantitative analysis on topics in the economics of education. Students should expect to work on optimization methods, regression analysis and causal inference analysis. We will use Stata (https://www.stata.com/) as statistical software. After we have built a solid foundation of knowledge, we will cover the first "real" topic of the economics of education: the return to schooling. During this phase of the course we seek to address two questions: what are the benefits that an individual acquires (i.e. in terms of earnings in the labor market or career opportunities) by attending more years of school and what are the benefits for society as a whole? While these questions seem to have a simple explanation, we will discover that they are actually quite challenging and require a more complex explanation. Once we have analyzed the benefits of schooling, we will study what motivates students to further their education for more years, as opposed to others. In particular, we will focus on the differences in the quality of environments that children face throughout childhood (e.g.: family environment and school/classroom environment) and the consequences for observed inequities. Finally, in the remaining portion of the course we will study the evaluations of different policies that have been implemented in the past from previous governments, with the goal of gaining insight for possible future policy recommendations.

Taught by: Agostinelli
Course usually offered in spring term
Prerequisites: ECON 101, ECON 102, ECON 103
Activity: Lecture
1 Course Unit

ECON 241 Economic Growth
The process of economic growth and the sources of differences in economic performance across nations are some of the most interesting, important and challenging areas in modern social science. You cannot travel or read the news without wondering why differences in standards of living among countries are so large. The primary purpose of this course is to introduce undergraduate students to these major issues nd to the theoretical tools necessary for studying them. The course therefore strives to provide students with a solid background in dynamic economic analysis, as well as empirical examples and data analysis.

One-term course offered either term
Prerequisites: ECON 101, 102, 103; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit

ECON 242 Topics in Macroeconomics
This course covers topics of interest in macroeconomics. Two sections are offered: Markets with Frictions. This course studies allocations in markets with frictions, as described by the difficulty in finding a trading partner, private information problems, commitment issues, and so on. Applications to labor markets, monetary economics, the marriage market will be discussed. The main technical tool will be search theory, but a liberal amount of calculus and other mathematics will be used. Numerical Methods for Macroeconomists. This course will study some of the numerical methods that are used in modern macroeconomics. This class will learn how to solve nonlinear equations, difference equations, interpolate functions, smooth data, and conduct Monte Carlo simulations on the computer. This will be done while studying economic problems, such as the determination of labor supply, economic growth and business cycle analysis. Calculus is an integral part of the course and some elementary probability theory will be drawn upon. The MATLAB programming language will be used.

One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit

ECON 243 Monetary and Fiscal Policies
This is an advanced course in macroeconomics. A relatively simple, but well defined and internally consistent model of the U.S. economy is set up and used to study how output is generated given the initial resources, how output is divided between consumption and addition to capital stock, and how this process accumulates over time. The role of prices including the rate of interest in this process is also reviewed, and monetary and fiscal policies needed to improve the performance of the economy under such circumstances are discussed.

One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115, ECON 103 is recommended.
Activity: Lecture
1 Course Unit

ECON 244 Macro-Modeling
This is an advanced undergraduate course in models of economic growth. Students will be introduced to the workhorse theoretical models that are used to understand growth by modern macroeconomic researchers and policy makers. The types of questions that we will address include: Why are some countries richer than others? Why do some countries grow quickly while others stagnate? Why did modern economic growth start in Western Europe? What can governments do to accelerate economic growth? How does economic growth interact with demographic and geographic factors? We will build theoretical models that can be used to answer these questions. There will be a strong focus on emphasizing the microeconomic foundations of models, and using the language of mathematics to express the underlying assumptions and assess their implications for policy. Hence, there are strict mathematical prerequisites. We will also compare the predictions of our models with the data. Thus, a fair amount of econometrics will be required. A class in statistics and econometrics is highly recommended.

Course not offered every year
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115, ECON 103 is recommended.
Activity: Lecture
1 Course Unit
ECON 246 Money and Banking
Money and Banking. This course studies the role that financial markets, institutions, and money play in resource allocation. Financial intermediation and the role of banks in the economic system are analyzed and the economic rationale behind banking regulation is studied. The course examines how monetary policy influences interest rates and asset markets, such as the bond market and the stock market. Finally, the instruments and goals of monetary policy are discussed, focusing in particular on credibility and commitment for central banks. All of the questions are explored analytically, using the tools of economic theory.
One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit

ECON 251 International Trade
Structure of the world economy; theory of international trade; economic growth and international trade; international trade policy: developed countries; developing countries. Direct investment, technology transfers, and the multinational firm.
One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: In addition, the LPS 200-level course, when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 252 International Finance
International monetary economics with emphasis on economic policy in an open economy. Topics covered in the course include: balance-of-payments adjustment, theories of exchange rate determination, the effects of exchange rate devaluation, macroeconomic policy under fixed and floating exchange rates, the Euro-dollar market, currency and balance of payments crises.
One-term course offered either term
Prerequisites: ECON 101, 102; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: In addition, the LPS 200-level course, when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 260 Decision Making Under Uncertainty
This course will show how individuals make decisions in a world full of uncertainties, both normatively and descriptively. This theory will help us build skills in understanding and analyzing a choice problem with uncertainty in a systematic fashion, as well as deepening our understanding of the fundamental concept of a utility function, which plays a critical role in economic modeling. The course requires a substantial ability of abstract thinking. Homework is intended to be thought-provoking rather than skill-sharpening.
Course not offered every year
Prerequisites: ECON 101, 103; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit
Notes: All prerequisites MUST be taken prior to enrolling in this course.

ECON 261 Topics in Development
This course studies institutions in developing economies. The first section of the course will cover the organization of production in traditional agrarian societies. Topics will include land, labor and credit markets. The second section of the course will focus on the role of the community in facilitating the transition to the modern market economy. Here we will study how the community spreads information, permits the formation of informal networks and organizes collective institutions, allowing individuals to take advantage of new economic opportunities.
Course not offered every year
Prerequisites: ECON 101; MATH 104, 114, or MATH 115. ECON 103 is recommended.
Activity: Lecture
1 Course Unit
Notes: Student may not receive credit for ECON 024 and ECON 261. In addition, the LPS 200-level course, when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.

ECON 262 Market Design
Markets increasingly use and create networks, both social and technological. Some examples: the complex trading networks that underlie modern financial markets and supply chains; social media platforms; dating apps. These profoundly affect the economy and society more broadly. Financial interdependencies are critical in economic crises, while rumors on Twitter have come to play a central role in our politics. How can we make sense of these phenomena - as individuals, within companies, and as policymakers? This seminar teaches models from the economics and statistics of networks that are essential to the task. Topics include the network origins of recessions, the diffusion of information and rumors, racial segregation, and matching markets. We emphasize how network models relate to key ideas from microeconomics.
One-term course offered either term
Prerequisites: ECON 101, 103; MATH 104, 114 or MATH 115.
Activity: Lecture
1 Course Unit
Notes: The LPS 200-level evening course (Section 601), when offered, WILL NOT count for Economics Majors unless you are officially registered as an LPS student.
ECON 271 Foundations of Market Economies
This course will study the historical and intellectual forces behind the appearance of market economies on the world stage. The voyages of exploration undertaken by Europeans in the 15th and 16th century created, in just a few decades, a global economy. By 1600, silver from Mexico was exchanged in Manila for ceramics made in Nanjing (China). After a long trip through the Pacific, Mexico, and the Atlantic, the ceramics ended up in the tables of prosperous merchants in Bruges (modern day Belgium). How did this integrated global economy appear? How did global interconnections over the centuries shape our current world? How did markets emerge and influence these interconnections? Who were the winners of globalization? And who were the losers? How did economists, political scientists, and others think about the strengths and weakness of market economies? This course will explore these questions and the role that markets have played in it from the late 15th century to the present. Even if the economic theory will structure much of the discussion, insights from intellectual history, cultural history, microhistory, legal history, and institutional history will help to frame the main narrative. The course will be, as well, truly global. First, beyond the traditional focus of economic history courses on Europe and the Americas, particular attention will be devoted to Africa and Asia. Second, the priority will be to highlight the interconnections between the different regions and to understand how the people living in them negotiated the opportunities and tensions created by the economic transformations triggered by globalization and how they conceptualized the changing lives around them. Finally, the class will highlight how diverse intellectual traditions handled the challenges presented by historical change.
One-term course offered either term
Prerequisites: ECON 101; MATH 104, 114 or MATH 115
Activity: Lecture
1 Course Unit

ECON 272 China: Inst & the Econ
The rise of China since its economic reform starting from 1978 is one of the most important developments the world witnessed in the twenty first century. In this seminar course, we explore topics including the political logic of China’s economic reform, the institutional foundations of the Chinese economic growth miracle, as well as detailed analysis of Chinese financial markets, housing markets, fiscal reform, corruption/ anti-corruption, labor market transitions, China’s integration into the world economy, village democracy and its impact on resource allocation, the impact of population ageing, the impact of China on US economy and politics, among others. The discussions will focus on China, but will relate broadly to emerging and developed economies. The course will be based on reading and discussing research articles and books selected by the instructors.
Also Offered As: PSCI 227
Prerequisites: ECON 101; MATH 104, 114 or MATH 115. ECON 103 recommended. PSCI majors PSCI 110 recommended.
Activity: Lecture
1 Course Unit

ECON 300 Honors Seminar
Students prepare an honors thesis in economics over the academic year, supervised by a faculty member of their choice. In both semesters students present their work in progress to the class. Any student intending to do empirical work in the thesis should have completed ECON 103 and ECON 104.
Two terms. student must enter first term.
Prerequisites: ECON 101, 102, 103, 104, and two 200-level courses; MATH 104, 114. GPA of at least 3.5 in Economics and permission of the instructor.
Activity: Seminar
1 Course Unit
Notes: Course meets weekly. Required of all honors majors.

ECON 681 Microeconomic Theory
Basic tools of microeconomic theory: consumer choice, firm behavior, partial and general equilibrium theory. This is a more theoretical treatment of the basic tools of microeconomic analysis than ECON 680.
Course usually offered in fall term
Prerequisites: Equivalent of ECON 101; meeting the department’s minimal mathematical requirements; or permission of instructor.
Activity: Lecture
1 Course Unit

ECON 682 Game Theory and Applications.
A graduate level introduction to decision making under uncertainty, applied game theory, and information economics.
Course usually offered in spring term
Prerequisites: ECON 680 or 681.
Activity: Lecture
1 Course Unit

ECON 701 Microeconomic Theory I
Nonlinear programming, theory of the consumer and producer, general equilibrium.
Course usually offered in fall term
Prerequisites: Meeting the Department’s minimal mathematical requirements, ECON 897 Summer Math Program.
Activity: Lecture
1 Course Unit

ECON 702 Macroeconomic Theory I
Dynamic programming, search theory, neoclassical growth theory, asset pricing, business cycles.
Course usually offered in spring term
Prerequisites: Meeting the Department’s minimal mathematical requirements; ECON 700, 701, 703, 897 Summer Math Program
Activity: Lecture
1 Course Unit

ECON 703 Microeconomic Theory II
Game theory, decision making under uncertainty, information economics.
Course usually offered in fall term
Prerequisites: Meeting the department’s minimal mathematical requirements, ECON 897 Summer Math Program
Activity: Lecture
1 Course Unit
ECON 704 Macroeconomic Theory II
Course usually offered in spring term
Prerequisites: Meeting the Department's minimal mathematical requirements; ECON 700, 701, 703, 897 Summer Math Program.
Activity: Lecture
1 Course Unit

ECON 705 Econometrics I: Fundamentals
Violations of classical linear regression assumptions, nonlinear regression models (including logit, probit, etc.), diagnostic testing, distributed lag models, panel data models, identification, linear simultaneous-equations model.
Course usually offered in fall term
Prerequisites: Meeting the Department's minimal mathematical requirements, ECON 897 Summer Math Program.
Activity: Lecture
1 Course Unit

ECON 706 Econometrics II: Methods & Models
Analysis in time and frequency domains, state space representations, Kalman filtering, conditional heteroskedasticity, nonlinear and nonparametric methods for time series, integration, co-integration, numerical and simulation techniques.
Course usually offered in spring term
Prerequisites: Meeting the department's minimal mathematical requirements; ECON 705, 897 Summer Math Program.
Activity: Lecture
1 Course Unit

ECON 708 The Economics of Agency, Information, and Incentives
This course studies the economics of adverse selection and moral hazard in strategic settings. The primary focus is on the agency relationship and the structure of agency contracts. Other settings include auctions, bilateral trading, and the internal organization of the firm.
One-term course offered either term
Prerequisites: Meeting the Department's minimal mathematical requirements; ECON 898 or equivalents.
Activity: Lecture
0.5 Course Units

ECON 712 Topics in Advanced Economic Theory and Mathematical Economics
Topics and prerequisites announced each year.
One-term course offered either term
Activity: Lecture
0.5 Course Units

ECON 714 Quantitative Macroeconomic Theory
One-term course offered either term
Prerequisites: ECON 702, 704
Activity: Lecture
0.5 Course Units

ECON 719 Economic Theory
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 712

ECON 721 Econometrics III: Advanced Techniques of Cross-Section Econometrics
Qualitative response models, panel data, censoring, truncation, selection bias, errors in variables, latent variable models, survey design, advanced techniques of semiparametric estimation and inference in cross-sectional environments. Disequilibrium models. Methods of simulated moments.
One-term course offered either term
Prerequisites: ECON 705 and 706.
Activity: Lecture
0.5 Course Units

ECON 722 Econometrics IV: Advanced Techniques of Time-Series Econometrics
Consistency and asymptotic normality for m-estimator and for generalized moment estimators. Asymptotics for integrated and cointegrated time-series. Inference in presence of nuisance parameters identified only under the alternative: consistent moment tests, testing for threshold effects, testing for structural breaks. Estimation of stochastic differential equations from discrete observations: simulated method of moments, indirect inference. Discrete time GARCH models and their continuous limits.
One-term course offered either term
Prerequisites: ECON 705 and 706.
Activity: Lecture
0.5 Course Units

ECON 729 Econometrics
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 721 and 722

ECON 739 International Economics
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 730 and 731

ECON 749 Monetary Economics
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 740, 741

ECON 750 Public Economics
Public goods, externalities, uncertainty, and income redistribution as sources of market failures; private market and collective choice models as possible correcting mechanisms. Microeconomic theories of taxation and political models affecting economic variables.
One-term course offered either term
Prerequisites: ECON 701, 703
Activity: Lecture
0.5 Course Units
ECON 751 Public Economics II
Expenditures: Alternative theories of public choice; transfers to the poor; transfers to special interests and rent seeking; social insurance; publicly provided private goods; public production and bureaucracy. Taxation: Tax incidence in partial and general equilibrium; excess burden analysis. Topics on tax incidence and efficiency: lifetime incidence and excess burden, dynamic incidence, the open economy. Normative theories of taxation: Optimal commodity and income taxation. The political economy of income taxation.
One-term course offered either term
Prerequisites: ECON 701, 703
Activity: Lecture
0.5 Course Units

ECON 759 Political Economy
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 750, 751

ECON 769 Economic Development Workshop
Forum at which visiting speakers, Penn faculty, and graduate students present research ideas.
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 760, 761, 791

ECON 779 Comparative Economic Systems
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 770, 771

ECON 781 Empirical Methods for Industrial Organization
The goal of the course is to explore links between theory and data in order to identify and test implications of economic models. Reduced form and structural approaches will be used to study a variety of topics that include: Estimation of multiproduct cost functions; detection of collusion, multimarket contact, and network externalities; asymmetric information: auctions and nonlinear pricing; price competition and product differentiation; and complementarities: innovation and organizational design.
One-term course offered either term
Prerequisite: ECON 780
Activity: Lecture
1 Course Unit

ECON 789 Applied Microeconomics Workshop
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 780, 781

ECON 792 Economics of Labor I
Topics include: Theories of the supply and demand for labor, wage determination, wage differentials, labor market discrimination, unemployment, occupational choice and dynamics of specific labor markets, theory of matching, trade unions. The theory and empirics of human capital accumulation, intertemporal labor supply, search, intergenerational mobility of income and wealth, contracts and bargaining, efficiency wage models, principal/agent models, and signaling models.
One-term course offered either term
Prerequisites: ECON 701, 703, 705, 706, 721
Activity: Lecture
1 Course Unit

ECON 793 Economics of Labor II
A continuation of ECON 792.
One-term course offered either term
Prerequisites: ECON 721, 792
Activity: Lecture
0.5 Course Units

ECON 799 Empirical Microeconomics
One-term course offered either term
Activity: Seminar
1 Course Unit
Notes: Related Courses: ECON 791, 792, 793

ECON 998 Individual Readings and Research
One-term course offered either term
Activity: Independent Study
0.5 Course Units

ECON 999 Independent Study
One-term course offered either term
Activity: Independent Study
1 Course Unit