ECONOMICS

Director of undergraduate studies: Samuel Kortum, Rm. 6, 37 Hillhouse Ave., 432-6217 or 432-3574, qazi.azam@yale.edu, economics.yale.edu/undergraduate-program

ECONOMICS

FACULTY OF THE DEPARTMENT OF ECONOMICS

Professors Joseph Altonji, Donald Andrews, Dirk Bergemann, Steven Berry, Truman Bewley, †Richard Brooks, Donald Brown, Xiaohong Chen, †Judith Chevalier, Pradeep Dubey (Visiting), Eduardo Engel (Visiting), Ray Fair, †Joan Feigenbaum, †Howard Forman, John Geanakoplos, †William Goetzmann, Pinelopi Goldberg, Timothy Guinnane, Philip Haile, Johannes Horner, Gerald Jaynes, Dean Karlan, Yuichi Kitamura, Alvin Klevorick, Samuel Kortum, Naomi Lamoreaux, Richard Levin, Giovanni Maggi, Konstantinos Meghir, †Robert Mendelson, Giuseppe Moscarini, †Barry Nalebuff, Zvika Neeman (Visiting), William Nordhaus, Peter Phillips, Benjamin Polak, Miguel Ramírez, †John Roemer, Mark Rosenzweig, Larry Samuelson, †Peter Schott, Robert Shiller, †Jody Sindelar, Anthony Smith, †Shyam Sunder, Aleh Tsyvinski, Christopher Udry, John Wallis (Visiting), Ebonya Washington, †Ernesto Zedillo

Associate Professors Costas Arkolakis, Eduardo Faingold, †Sheila Olmstead, Kareen Rozen

Assistant Professors David Atkin, Timothy Armstrong, Ruben Durante (Visiting), Mitsuru Igami, Daniel Keniston, Amanda Kowalski, Nancy Qian, Anja Sautmann (Visiting), Joseph Shapiro, Eric Weese

Senior Lecturers Cheryl Doss, Tolga Koker

Lecturers Irasema Alonso, Michael Boozer, Douglas McKee, Nicholas Perna, Stephen Roach, Michael Schmertzler, Katerina Simons, David Swensen, Dean Takahashi

†Primary appointment in another department or school.

Economics concerns the wealth of nations, its origins in production and exchange, its allocation among competing uses, its distribution among individuals, and its accumulation or decline. Economics at Yale is regarded and taught as part of a liberal education, not as a preparation for any particular vocation. Nonetheless, economics provides an especially relevant background for a number of professions.

Requirements of the major Students majoring in Economics are required to take twelve term courses. Two of these may be introductory economics courses, one in microeconomics and one in macroeconomics. All majors must take the following courses: one term of intermediate microeconomics (ECON 121 or 125); one term of intermediate macroeconomics (ECON 122 or 126); one term of econometrics (ECON 131, 132, or 136); and one Yale mathematics course, usually selected from MATH 112, 115, 118, or 120. Students who place out of these mathematics courses must take a higher-level mathematics course at Yale and should consult the director of undergraduate studies in Economics. All of these required courses should be completed prior to the senior year. Majors must also take two courses numbered ECON 400–491, at least one of which must be taken in the senior year.

Subject to approval by the director of undergraduate studies, students may count toward the major one course related to economics but taught in another field, in addition to the required course in mathematics.

Students who take a term abroad or take summer courses not at Yale may petition the director of undergraduate studies to count at most two courses from outside Yale toward the requirements of the major. Students who take a year abroad may petition to count at most three courses. Many economics courses taken outside Yale do not meet the requirements of the Economics major; students should consult with the director of undergraduate studies before taking such courses. Courses taken outside Yale may not be counted toward the major requirements in intermediate microeconomics, intermediate macroeconomics, or econometrics.

Courses taken Credit/D/Fail and residential college seminars may not be counted toward the requirements of the major.

Introductory courses These courses serve students considering a major in Economics as well as others who would like an introduction to the subject. Most students enroll in ECON 115 and 116, lecture courses with a discussion section. ECON 115 is concerned with microeconomics and includes such topics as markets, prices, production, distribution, and the allocation of resources. ECON 116 covers such macroeconomic issues as unemployment, inflation, growth, and international economics; it has a microeconomics prerequisite.

ECON 110 and 111 are limited-enrollment alternatives to ECON 115 and 116; they are open only to freshmen selected from those who preregister. ECON 108 also covers microeconomics, but with a greater emphasis on quantitative methods and examples. It is intended for, but not restricted to, freshmen with little or no experience with calculus. Enrollment is limited, and preregistration is required.

ECON 108, 110, and 115 are similar in substance, and ECON 111 and 116 are similar in substance as well. A student may receive credit for only one course each in introductory microeconomics and introductory macroeconomics.

The department recommends that students interested in majoring in Economics take introductory economics in the freshman year. In order to make the introductory courses available to all freshmen and to students majoring in other subjects, the introductory courses do not have a mathematics requirement.

Introductory courses: placement and exemptions Students with a score of 5 on the Advanced Placement tests for microeconomics and macroeconomics and a score of 5 on the Advanced Placement Calculus BC test may petition the director of undergraduate studies to
place out of introductory microeconomics and introductory macroeconomics and enroll directly in intermediate microeconomics. It is recommended that students with a score of 5 on the Advanced Placement economics tests but without a 5 on the Calculus BC test take a Yale mathematics course such as MATH 115 or 120 and then petition the director of undergraduate studies to place out of introductory microeconomics and take intermediate microeconomics in the following term. Students with high scores on examinations equivalent to Advanced Placement, such as the GCE A-level or Higher Level International Baccalaureate, may also petition to be exempted from the introductory courses. For other placement and exemption questions, consult the departmental Web site (http://www.econ.yale.edu/undergrad/ugrad.htm).

**Mathematics**  Students are advised to meet the mathematics requirement for the major during their freshman year. The department also recommends that majors either complete MATH 118 or complete two term courses including MATH 120 and either 222 or 225. The latter two-term sequence is preferable for students who wish to take further mathematics courses or who plan to pursue a graduate degree in economics.

**Econometrics**  Students are advised to take a two-term sequence of statistics and econometrics courses, especially if they are considering a senior essay. One option is to take ECON 131 followed by 132. Students with a stronger mathematics background or who plan to pursue a graduate degree in economics are encouraged to take either ECON 135 or STAT 241 and 242, followed by ECON 136. Prospective majors are urged to start their econometrics sequence in the fall of sophomore year.

**Intermediate microeconomics and macroeconomics**  Along with econometrics, intermediate microeconomics and macroeconomics form the core of the major. Two options are available in both microeconomics and macroeconomics. The standard intermediate courses are ECON 121 and 122. Students with a stronger mathematics background are encouraged to take ECON 123 and 126 instead. The intermediate courses need not be taken in sequence: in particular, ECON 123 is not required for 126.

**Field courses**  The department offers a wide selection of upper-level courses that explore in greater detail material presented in introductory courses. Advanced fields of economics include theoretical, quantitative, and mathematical economics; market organization; human resources; finance; international and development economics; public policy and the public sector; and economic history. Some advanced field courses have only introductory microeconomics as a prerequisite. Others apply intermediate-level theory or econometrics to economic problems and institutions, and for this reason list one or more of the theory or econometrics courses as prerequisites.

**Advanced lecture courses**  Advanced lecture courses, numbered ECON 400–449, are limited-enrollment courses that cover relatively advanced material in more depth than regular field courses. Prerequisites usually include two of intermediate microeconomics, intermediate macroeconomics, and econometrics or a mathematics course such as MATH 120. Advanced lecture courses may be applied toward the senior requirement. While these courses vary in approach, they share features of other Economics courses: like field courses, they devote some time to traditional lecturing, and like seminars, they emphasize class interaction, the writing of papers, and the reading of journal articles.

**Seminars**  Although there is diversity in approaches in the various seminars (courses numbered ECON 450–489), all have in common an emphasis on class interaction, the writing of papers, and the reading of journal articles. Seminars represent an opportunity for students to apply and extend the economics they have learned through their earlier coursework.

Enrollment in seminars and advanced lecture courses is limited. Senior Economics majors who have not yet completed the senior requirement for the major are given priority for these courses and may preregister; see the departmental Web site (http://www.econ.yale.edu/undergrad/ugrad.htm) for instructions. Students must take two of three core courses in intermediate microeconomics, intermediate macroeconomics, and econometrics before enrolling in a seminar. Underclassmen in the major and nonmajors may also enroll in Economics seminars and advanced lecture courses as space permits, but they do not preregister.

**Senior requirement**  Majors are required to take two departmental courses numbered ECON 400–491, at least one of which must be taken in the senior year. The senior requirement must be met by Yale Economics courses; courses in other departments or taken elsewhere do not suffice.

**Senior essay**  Only those majors who submit a senior essay are eligible for Distinction in the Major. There are three types of senior essay: (1) students may write a one-term essay in the fall of the senior year as an independent project on a topic of their own design under the close and regular supervision of a faculty adviser (ECON 491); (2) students may write a two-term essay starting in the fall of the senior year as an independent project on a topic of their own design under the close and regular supervision of a faculty adviser (ECON 491 and 492); or (3) students may write a one-term essay in an advanced departmental course (numbered 400–489) taken during the fall term of the senior year, with the option of completing the essay in the spring of the senior year as an independent project under the close and regular supervision of a faculty adviser (ECON 492); under this option the instructor of the advanced departmental course taken in the fall term typically serves as the faculty adviser.

Note that the essay must be written during the senior year and that students may submit a senior essay only if they have an approved prospectus and a senior essay adviser. Senior essays that are not submitted on time will receive a grade of Incomplete. Senior essays with grades of Incomplete without permission of the residential college dean are subject to grade penalties when submitted.
Meetings for seniors to discuss the senior essay will be held on Wednesday, August 28, at 4:30 p.m. and Thursday, August 29, at 1:30 p.m. in Room 106, 28 Hillhouse Avenue. Details regarding calculations for Distinction in the Major will be discussed in these meetings, and senior essay guidelines will be distributed. Senior essay prospectus forms are due Monday, September 30, 2013.

**Distinction in the Major** To be considered for Distinction, students must meet the appropriate grade standards (see the Undergraduate Curriculum section) and submit a senior essay to the Economics department. Students who fail to submit an essay will not be considered for Distinction in the Major. Grade computation for Distinction does not include the introductory economics courses, the required mathematics course, or courses taken outside Yale.

**Graduate courses** Well-qualified students who have acquired the requisite background in undergraduate courses may, with written permission of the instructor, the director of undergraduate studies, and the director of graduate studies, be admitted to graduate courses and seminars. Descriptions of courses are available in the Economics department office.

Students who are planning graduate work in economics should take additional mathematics courses beyond the one-term course required for the major. Many graduate programs in economics require courses in multivariate calculus and linear algebra. Students are urged to discuss their plans for graduate work with the director of undergraduate studies as early in their college careers as possible.

**Faculty representatives** The Economics department has faculty representatives associated with each residential college. Students majoring in Economics should secure written approval of their course selection from one of their college representatives. Changes in their major program must be approved by a representative. Questions concerning the major or programs of study should be directed to a college representative. For 2013–2014 the college representatives are as follows:

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<tr>
<th>BK</th>
<th>S. Berry, T. Guinnane</th>
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<th>G. Jaynes, M. Rosenzweig</th>
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<td>BR</td>
<td>K. Meghir, E. Washington</td>
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<td>CC</td>
<td>M. Igami, A. Kowalski</td>
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<td>J. Altonji, T. Bewley</td>
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<td>D. Atkin, C. Arkolakis</td>
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<td>D. Andrews, N. Lamoreaux</td>
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<td>JE</td>
<td>X. Chen, R. Fair</td>
<td>TC</td>
<td>P. Haile, L. Samuelson</td>
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**REQUIREMENTS OF THE MAJOR**

**Prerequisites** None

**Number of courses** 12 term courses (incl senior req)

**Distribution of courses** 1 intro course in microeconomics, 1 in macroeconomics (or equivalents with DUS permission); 1 math course, as specified

**Specific courses required** ECON 121 or 125; ECON 122 or 126; ECON 131, 132, or 136

**Substitution permitted** 1 related course in another dept, with DUS approval

**Senior requirement** 2 courses numbered ECON 400–491, at least 1 in senior year

*ECON 373b / PLSC 371b, Political Economy of Mass Media* Ruben Durante

Introduction to the growing body of literature on the political economy of traditional and new media, with a focus on empirical work. Topics include the effects of mass media on electoral competition, on policy, and on nonpolitical outcomes; the definition, measure, and determinants of media bias; and the influence of online social media on news consumption and political behavior.  

**Introductory Courses**

*ECON 108a or b, Quantitative Foundations of Microeconomics* Tolga Koker [F] and Katerina Simons [Sp]

Introductory microeconomics with a special emphasis on quantitative methods and examples. Intended for students with limited or no experience with calculus. Enrollment limited. Online preregistration is required on Tuesday, August 27; visit [www.econ.yale.edu/undergrad/ugrad.htm](http://www.econ.yale.edu/undergrad/ugrad.htm) for more information. May not be taken after ECON 110 or 115. QR, SO

*ECON 110a, An Introduction to Microeconomic Analysis* Tolga Koker and staff

Similar to ECON 115, but taught as a lecture discussion with limited enrollment. Enrollment limited to freshmen. Online preregistration is required; visit [www.econ.yale.edu/undergrad/ugrad.htm](http://www.econ.yale.edu/undergrad/ugrad.htm) for more information. May not be taken after ECON 108 or 115. QR, SO

*ECON 111b, An Introduction to Macroeconomic Analysis* Irasema Alonso and staff

Similar to ECON 116, but taught as a lecture discussion with limited enrollment. Enrollment limited to freshmen; prospective students must preregister at [https://students.yale.edu/ocs-preference/select/select?id=9310](https://students.yale.edu/ocs-preference/select/select?id=9310). May not be taken after ECON 116. Prerequisite: ECON 108, 110, or 115. SO

**ECON 115a or b, Introductory Microeconomics** Christopher Udry [F] and Steven Berry [Sp]

An introduction to the basic tools of microeconomics to provide a rigorous framework for understanding how individuals, firms, markets, and governments allocate scarce resources. The design and evaluation of public policy. May not be taken after ECON 108 or 110. QR, SO
ECON 116a or b, Introductory Macroeconomics  Ray Fair [F] and Robert Shiller [Sp]
An introduction that stresses how the macroeconomy works, including the determination of output, unemployment, inflation, interest rates, and exchange rates. Economic theory is applied to current events. May not be taken after ECON 111. Prerequisite: ECON 108, 110, or 115.  SO

Intermediate Courses

ECON 121a or b, Intermediate Microeconomics  Larry Samuelson [F] and Stephan Lauermann [Sp]
The theory of resource allocation and its applications. Topics include the theory of choice, consumer and firm behavior, production, price determination in different market structures, welfare, and market failure. After introductory microeconomics and completion of the mathematics requirement for the major or its equivalent. Elementary techniques from multivariate calculus are introduced and applied, but prior knowledge is not assumed. May not be taken after ECON 125.  QR, SO

*ECON 122a or b, Intermediate Macroeconomics  William Nordhaus [F] and Giuseppe Moscarini [Sp]
Contemporary theories of employment, finance, money, business fluctuations, and economic growth. Their implications for monetary and fiscal policy. Emphasis on empirical studies, financial and monetary crises, and recent policies and problems. Enrollment limited in the fall term. After two terms of introductory economics and completion of the mathematics requirement for the major or its equivalent. May not be taken after ECON 126.  QR, SO

ECON 125a, Microeconomic Theory  Zvika Neeman
Similar to ECON 121 but with a more intensive treatment of consumer and producer theory, and covering additional topics including choice under uncertainty, game theory, contracting under hidden actions or hidden information, externalities and public goods, and general equilibrium theory. Recommended for students considering graduate study in economics. After introductory economics, and MATH 118 or 120 or equivalent. May not be taken after ECON 121.  QR, SO

[ ECON 126, Macroeconomic Theory ]

Econometrics and Statistics Courses

ECON 131a or b, Econometrics and Data Analysis I  David Atkin [F] and Nancy Qian [Sp]
Basic probability theory and statistics, distribution theory, estimation and inference, bivariate regression, introduction to multivariate regression, introduction to statistical computing. After introductory microeconomics and MATH 112 or equivalent.  QR, SO

ECON 132a or b, Econometrics and Data Analysis II  Konstantinos Meghir [F] and Joseph Altonji [Sp]
Continuation of ECON 131, with a focus on multivariate regression. Topics include statistical inference, choice of functional form, heteroskedasticity, serial correlation, two-stage least squares, qualitative choice models, time series models, and forecasting. Emphasis on statistical computing and the mechanics of how to conduct and present empirical research. After two terms of introductory economics, completion of the mathematics requirement for the major, and ECON 131 or 135 or a course in the STAT 101–106 series.  QR, SO

ECON 135a, Introduction to Probability and Statistics  Timothy Armstrong
Foundations of mathematical statistics: probability theory, distribution theory, parameter estimation, hypothesis testing, regression, and computer programming. Recommended for students considering graduate study in economics. After introductory microeconomics and either (1) MATH 118; or (2) MATH 220 and either MATH 222 or MATH 225.  QR, SO

ECON 136b, Econometrics  Yuichi Kitamura
Continuation of ECON 135 with a focus on econometric theory and practice: problems that arise from the specification, estimation, and interpretation of models of economic behavior. Topics include classical regression and simultaneous equations models; panel data; and limited dependent variables. Recommended for students considering graduate study in economics. After ECON 135 or STAT 241 and 242.  QR, SO

Field Courses

ECON 159b, Game Theory  Barry Nalebuff
An introduction to game theory and strategic thinking. Ideas such as dominance, backward induction, Nash equilibrium, evolutionary stability, commitment, credibility, asymmetric information, adverse selection, and signaling are applied to games played in class and to examples drawn from economics, politics, and the movies, elsewhere. After introductory microeconomics. No prior knowledge of game theory assumed.  QR, SO

ECON 170a, Health Economics and Public Policy  Howard Forman
Application of economic principles to the study of the U.S. health care system. Emphasis on basic principles about the structure of the U.S. system, current problems, proposed solutions, and the context of health policy making and politics. After introductory microeconomics.  SO

ECON 182b / HIST 135b, American Economic History  John Wallis
The growth of the American economy since 1790, both as a unique historical record and as an illustration of factors in the process of economic development. The American experience viewed in the context of its European background and patterns of industrialization overseas. After introductory microeconomics.  WR, SO
ECON 184b, International Economics  Peter Schott
Introduction to conceptual tools useful for understanding the strategic choices made by countries, firms, and unions in a globalized world. After two terms of introductory economics.  SO

ECON 186a, European Economic History, 1700–1815  Timothy Guinnane
European economic growth and development from the late seventeenth century through the first stages of the British industrial revolution. The role of institutional development, trade and imperialism, agricultural improvements, and industrialization. Particular attention to comparisons between Britain and other parts of Europe. After ECON 115 or 121, and ECON 116 or 122.  SO

ECON 251b, Financial Theory  John Geanakoplos
Capital asset pricing model, arbitrage pricing theory, option pricing, social security, operation of security exchanges, investment banks, securitization, mortgage derivatives, interest rate derivatives, hedge funds, financial crises, agency theory, and financial incentives. After introductory microeconomics.  QR, SO

ECON 275b, Public Economics  Ebonya Washington
The role of government in the economy and in our economic lives. Reasons for government intervention in the market economy and the impact of government expenditure programs and taxation systems on welfare and behavior. Tools of microeconomics applied to issues such as government response to global warming, the impact of redistribution and social insurance on individual behavior, school choice, social security vs. private retirement savings accounts, and government vs. private health insurance. After introductory microeconomics.  SO

ECON 280a, Poverty under Postindustrial Capitalism  Gerald Jaynes
Political economy of contemporary social welfare policy as it has been affected by economic restructuring, the development of the underclass, and the effects of immigration on the economy and its social structure. Prerequisite: introductory microeconomics.  SO

ECON 325b, Economics of Developing Countries  Nancy Qian
Analysis of current problems of developing countries. Emphasis on the role of economic theory in informing public policies to achieve improvements in poverty and inequality, and on empirical analysis to understand markets and responses to poverty. Topics include microfinance, education, health, agriculture, intrahousehold allocations, gender, and corruption. After introductory microeconomics.  SO

ECON 327b, The Economics of Poverty Alleviation  Dean Karlan
Measures that succeed and fail—and why—in the fight against poverty in developing countries. Fundamentals of behavioral economics and their application to policy and program design. When and how to use experimental methods to evaluate ideas and programs. Interventions and policies that apply to households, small firms, and communities, with particular attention to microfinance, health, and education. After introductory microeconomics and econometrics.  WR, SO

ECON 330b, Economics of Natural Resources  Robert Mendelsohn
Microeconomic theory brought to bear on current issues in natural resource policy. Topics include regulation of pollution, hazardous waste management, depletion of the world’s forests and fisheries, wilderness and wildlife preservation, and energy planning. After introductory microeconomics.  QR, SO

ECON 338a, The Next China  Stephen Roach
Economic development in China since the late 1970s. Emphasis on factors pushing China toward a transition from its modern export-and investment-led development model to a pro-consumption model. The possibility of a resulting identity crisis, underscored by China’s need to embrace political reform and by the West’s long-standing misperceptions of China. Prerequisite: introductory macroeconomics.  SO

ECON 345a, Welfare Economics and Equity  Donald Brown
Efficiency in simple general equilibrium models of competitive markets and market failures in which the first and second welfare theorems do not hold. Externalities, public goods, and monopoly pricing. The relative merits of the Kaldor-Hicks compensation principle in partial equilibrium analysis and the Pareto principle in general equilibrium analysis. Prerequisites: ECON 121 or 125, and MATH 112 or equivalent  SO

ECON 350a, Mathematical Economics: General Equilibrium Theory  Truman Bewley
An introduction to general equilibrium theory and its extension to equilibria involving uncertainty and time. Discussion of the economic role of insurance and of intertemporal models, namely, the overlapping generations model and the optimal growth theory model. Recommended for students considering graduate study in economics. After MATH 118 or 120, and intermediate microeconomics.  QR, SO

ECON 351b, Mathematical Economics: Game Theory  Zvika Neeman
Introduction to game theory and choice under uncertainty. Analysis of the role of information and uncertainty for individual choice behavior, as well as application to the decision theory under uncertainty. Analysis of strategic interaction among economic agents, leading to the theory of auctions and mechanism design. Recommended for students considering graduate study in economics. After MATH 118, 120, and intermediate microeconomics.  QR, SO
ECON 371b, Financial Time Series Econometrics  Xiaohong Chen
Survey of methods used to analyze financial time series data. Classic linear models; autocorrelation in error variances; methods that allow
for nonlinearities; methods tailored to analysis of high-frequency data and modeling of value at risk; vector autoregressive models; factor
models; the Kalman filter. Prerequisites: ECON 131 and 132, or ECON 135 and 136.  SO

Advanced Lecture Courses

Senior Economics majors may preregister for advanced lecture courses; see www.econ.yale.edu/undergrad/ugrad.htm for instructions. Other
interested students may enroll with permission of the instructor during the course selection period.

*ECON 402b, Economics of Health and Health Care  Amanda Kowalski
Economic principles and empirical methods applied to issues in health economics. Discussion of policies to address market failures in
health care markets. Consumer behavior in medical markets, valuing medical improvements, and evaluating health insurance reform.
Prerequisites: intermediate microeconomics and econometrics.  SO

*ECON 407b / GLBL 310b, International Finance  Costas Arkolakis
A study of how consumers and firms are affected by the globalization of the world economy. Topics include trade costs, the current
account, exchange rate pass-through, international macroeconomic co-movement, multinational production, and gains from
globalization. Prerequisite: intermediate macroeconomics or equivalent.  SO

*ECON 408a / GLBL 238a, International Trade Policy  Giovanni Maggi
Analysis of issues concerning international trade policy and agreements, including recent academic research. Welfare analysis of trade
policy; the political economy of trade policy; international trade agreements. Attention to both theoretical methods and empirical
research. Prerequisites: intermediate microeconomics and ECON 184.  SO

*ECON 410b, The Economics of Innovation  Mitsuru Igami
Study of forces that drive the process of innovation. Creativity and creative destruction; the innovator’s dilemma; incentives to innovate;
competitive advantage; industry evolution; intellectual property. Use of both formal theoretical models and quantitative empirical
studies, as well as descriptive studies from management strategy and economic history. Prerequisites: econometrics and intermediate
microeconomics.

*ECON 411b, Economics of Uncertainty and Information  Eduardo Faingold
Individual and collective choice in the presence of uncertainty and asymmetric information. Implications of such decision making for
economic phenomena. Basic analytical tools for studying decisions under uncertainty. Asset markets, adverse selection, screening,
signaling, moral hazard, incomplete contracts, bilateral trade with asymmetric information, and mechanism design. Prerequisites:
intermediate microeconomics and econometrics.  SO

*ECON 412b, International Environmental Economics  Joseph Shapiro
Introduction to international and environmental economics and to research that combines the two fields. Methods for designing
and analyzing environmental policy when economic activity and pollution cross political borders. Effects of market openness on the
environment and on environmental regulation; international economics and climate change. Prerequisites: intermediate microeconomics
and econometrics.

Seminars

Senior Economics majors may preregister for departmental seminars; see www.econ.yale.edu/undergrad/ugrad.htm for instructions. Other
interested students may enroll with permission of the instructor during the course selection period.

*ECON 450a, Investment Analysis  David Swensen and Dean Takahashi
Examination of investment management in theory and practice. Discussion of asset allocation, investment strategy, and manager selection
from the perspective of an institutional investor. Focus on the degree of market efficiency and opportunity for generating attractive
returns.  SO

*ECON 452b / EP&E 300b / GLBL 302b, Contemporary Issues in Energy Policy  Ioannis Kessides
Overview of challenges in the global energy framework generated by concerns about energy security and climate change; public policies
necessary for addressing these issues. Potential contributions and limitations of existing, improved or transitional, and advanced
technologies.  SO

*ECON 456a, Private Equity Investing  Michael Schmertzler
A case-oriented study of principal issues and investment types found in substantial private equity portfolios. Discussion of enterprise
valuation, value creation, business economics, negotiation, and legal structure, based on primary source materials and original cases.
Prerequisites: intermediate microeconomics and econometrics.  SO

*ECON 458a / GLBL 304a, Economics of Infrastructure Policy  Ioannis Kessides
The global shift in economic approaches to the ownership and regulation of infrastructure since the 1980s. The challenges involved in
such policy changes examined within the historical, economic, and institutional context of developing, transition, and advanced industrial
economies. Assessment of the economic and distributional outcomes of reforms such as competitive restructuring, privatization, and new
approaches to regulation. Prerequisite: ECON 121 or 125 or equivalent.
behaviors of discriminators as documented in court cases and government hearings; the extent to which economic theory and

*ECON 475b / EP&E 286b, Discrimination in Law, Theory, and Practice  Gerald Jaynes
How law and economic theory define and conceptualize economic discrimination; whether economic models adequately describe behaviors of discriminators as documented in court cases and government hearings; the extent to which economic theory and
econometric techniques aid our understanding of actual marketplace discrimination. Prerequisites: introductory microeconomics and at least one additional course in Economics, African American Studies, Ethnicity, Race, and Migration, or Women’s, Gender, and Sexuality Studies.

Ways that governments create and enforce rules. The nature of governments and the nature of rules; the dynamics of how governments are able to create rules that powerful individuals have incentives to obey. Prerequisite: intermediate macroeconomics.  SO

*ECON 485a / GLBL 187a, Measuring Well-Being: Concepts and Applications  Murray Leibbrandt and Martin Wittenberg
Examination of well-being in conditions of poverty, inequality, and social mobility. Readings in conceptual literature combined with research using data to measure well-being. In-class analysis of South African datasets; independent research using survey data from another country. Prerequisite: introductory microeconomics. Recommended preparation: GLBL 121.  SO

*ECON 486a, Topics in Political Economics  Ruben Durante
Introduction to the field of political economy. Focus on empirical study of the relationships between voters, politicians, mass media, and special interests, and effects of these relationships on policy making. Prerequisites: intermediate microeconomics and econometrics.  SO

*ECON 487a / EP&E 365a / GLBL 313a / PLSC 417a, The Political Economy of AIDS in Africa  Nicoli Nattrass
The impact of and responses to the AIDS pandemic in Africa examined from a comparative perspective. Focus on South and southern Africa. Some background in social science and economics desirable.  SO

*ECON 489b, Auctions and Bidding  Zvika Neeman
Introduction to the theory of auctions and competitive bidding. Auction formats and their relation to strategies used by bidders and sellers. Topics include the revenue equivalence theorem, optimal auctions, the winner’s curse, double auctions, auctions of multiple objects, and collusion. Prerequisite: intermediate microeconomics.

*ECON 491a and ECON 492b, The Senior Essay  Samuel Kortum
Students deciding to write one-term senior essays by enrolling in ECON 491, or two-term senior essays by enrolling in ECON 491 and 492, must choose their topics and advisers by Monday, September 30, 2013. One-term senior essays are due at the end of the last week of classes in the fall term. Two-term senior essays are due by 4:30 p.m. on Wednesday, April 2, 2014. Students writing senior essays who would like to be considered for Distinction in the Major must submit three copies of their essay to the Economics department office by 4:30 p.m. on Wednesday, April 2, 2014. Advisers are chosen with the assistance of the director of undergraduate studies. The format and character of the departmental senior essay may vary to suit the interest of the student and the demands of the topic, but it is expected that the tools and concepts of economic analysis will be employed and that the essay will contain original research. Paper lengths may vary; the normal expectation is thirty pages. Students may receive up to two credits for the senior essay, though it counts as only one departmental seminar whether one or two terms are taken. Meetings for seniors to discuss the senior essay will be held on Wednesday, August 28, at 4:30 p.m. and Thursday, August 29, at 1:30 p.m. in Room 106, 28 Hillhouse Avenue. Seniors planning to write either a one-term or a two-term senior essay should attend one of these meetings. Details regarding calculation of Distinction will be discussed and senior essay guidelines will be distributed.

*ECON 498a and ECON 499b, Directed Reading  Samuel Kortum
Students desiring a directed reading course in special topics in economics not covered in other graduate or undergraduate courses may elect this course, usually not more than once, with written permission of the director of undergraduate studies and of the instructor. The instructor meets with the student regularly, typically for an hour a week, and the student writes a paper or a series of short essays. Does not meet the requirement for a departmental seminar.