**General Economics and Theory**

**14.003 Microeconomic Theory and Public Policy**
Subject meets with 14.03  
Prereq: 14.01 or permission of instructor  
G (Fall, Spring)  
4-0-8 units

Applies microeconomic theory to analysis of public policy. Builds from microeconomic model of consumer behavior; extends to operation of single and multiple markets and analysis of why markets sometimes fail. Empirical examples to evaluate theory, focusing on the casual effects of policy interventions on economic outcomes. Topics include minimum wages and employment, food stamps and consumer welfare, economics of risk and safety regulation, the value of education, and gains from international trade. Graduate students are expected to complete additional assignments.  
*Fall: D. Autor*  
*Spring: N. Agarwal*

**14.01 Principles of Microeconomics**
Prereq: None  
U (Fall, Spring)  
3-0-9 units. HASS-S

Introduces microeconomic concepts and analysis, supply and demand analysis, theories of the firm and individual behavior, competition and monopoly, and welfare economics. Applications to problems of current economic policy. Taught in two formats - lecture/recitation and recitation only - each with 3 sessions per week. Same content and exams.  
*Fall: J. Gruber*  
*Spring: J. Harris*

**14.02 Principles of Macroeconomics**
Prereq: None  
U (Fall, Spring)  
3-0-9 units. HASS-S

Provides an overview of macroeconomic issues including the determination of national income, economic growth, unemployment, inflation, interest rates, and exchange rates. Introduces basic macroeconomic models and illustrates key principles through applications to the experience of the US and other economies. Explores a range of current policy debates, such as the economic effects of monetary and fiscal policy, the causes and consequences of the 2008 global financial crisis, and the factors that influence long-term growth in living standards. Lectures are recorded and available for students with scheduling conflicts.  
*Fall: R. Caballero, M. Beraja*  
*Spring: J. Poterba*

**14.03 Microeconomic Theory and Public Policy**
Subject meets with 14.003  
Prereq: 14.01 or permission of instructor  
U (Fall, Spring)  
4-0-8 units. HASS-S

Applies microeconomic theory to analysis of public policy. Builds from microeconomic model of consumer behavior; extends to operation of single and multiple markets and analysis of why markets sometimes fail. Empirical examples to evaluate theory, focusing on the casual effects of policy interventions on economic outcomes. Topics include minimum wages and employment, food stamps and consumer welfare, economics of risk and safety regulation, the value of education, and gains from international trade.  
*Fall: D. Autor*  
*Spring: N. Agarwal*

**14.04 Intermediate Microeconomic Theory**
Prereq: 14.01, Calculus II (GIR)  
U (Fall)  
4-0-8 units. HASS-S

Analysis of consumer and producer decisions including analysis of competitive and monopolistic markets. Price-based partial and general equilibrium analysis. Introduction to game theory as a foundation for the strategic analysis of economic situations. Imperfect competition, dynamic games among firms. Failures of general equilibrium theory and their resolutions: externalities, public goods, incomplete information settings, signaling, screening, insurance, alternative market mechanisms, auctions, design of markets.  
*J. Toikka*
14.05 Intermediate Macroeconomics
Prereq: 14.01, 14.02
U (Spring)
4-0-8 units. HASS-S
Uses the tools of macroeconomics to investigate various macroeconomic issues in depth. Topics range from economic growth and inequality in the long run to economic stability and financial crises in the short run. Surveys many economic models used today. Requires a substantial research paper on the economics of long-run economic growth.
A. Simsek

14.06 Advanced Macroeconomics
Prereq: 14.01, 14.02
U (Spring)
4-0-8 units. HASS-S
Blends a thorough study of the theoretical foundations of modern macroeconomics with a review of useful mathematical tools, such as dynamic programming, optimal control, and dynamic systems. Develops comfort with formal macroeconomic reasoning and deepens understanding of key macroeconomic phenomena, such as business cycles. Goes on to study more specific topics, such as unemployment, financial crises, and the role of fiscal and monetary policy. Special attention to reviewing relevant facts and disentangling them from their popular interpretations. Uses insights and tools from game theory. Includes applications to recent and historical events.
G. M. Angeletos

14.07 Financial Markets and the Macroeconomy (New)
Prereq: 14.01, 14.02
U (Fall)
4-0-8 units. HASS-S
Analyzes the macroeconomic effects of financial markets, with emphasis on understanding financial crises. Surveys the benchmark theories of asset pricing, investment, and the capital structure. Topics include risk, arbitrage, financial market equilibrium, and market efficiency. Also introduces financial frictions, and analyzes the mechanisms by which frictions cause financial crises; focuses on asymmetric information, leverage, financial intermediation, belief disagreements, asset bubbles, fire sales, bank runs, interconnections, and complexity.
A. Simsek

14.08 Technical Topics in Economics
Prereq: 14.01
U (Fall, Spring)
4-0-8 units
Can be repeated for credit.
Considers technical issues of current research interest in economics. Consult Department Headquarters

14.09 Reading Seminar in Economics
Prereq: 14.04, 14.06
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.
Reading and discussion of particular topics in economics. Open to undergraduate students by arrangement with individual faculty members. Consult Department Headquarters.
A. Mikusheva

14.10 Reading Seminar in Economics
Prereq: 14.04, 14.06
U (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.
Reading and discussion of particular topics in economics. Open to undergraduate students by arrangement with individual faculty members. Consult Department Headquarters.
A. Mikusheva

14.11 Topics in Economics
Prereq: 14.01
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Fall)
4-0-8 units. HASS-S
Can be repeated for credit.
Considers issues of current research interest in economics. Consult Department Headquarters

14.12 Economic Applications of Game Theory
Prereq: 14.01; 6.041B or permission of instructor
U (Fall)
4-0-8 units. HASS-S
Analysis of strategic behavior in multi-person economic settings. Introduction to solution concepts, such as rationalizability, backwards induction, Nash equilibrium, subgame-perfect equilibrium, and sequential equilibrium, with a strong emphasis on the assumptions behind these solution concepts. Issues of incomplete information, such as signaling and reputation formation. Applications drawn from microeconomics and political economy.
M. Yildiz
14.121 Microeconomic Theory I  
Prereq: 14.04, permission of instructor  
G (Fall; first half of term)  
3-0-3 units  
Covers consumer and producer theory, markets and competition, general equilibrium and the welfare theorems; featuring applications, uncertainty, identification and restrictions models place on data. Enrollment limited; preference to PhD students.  
R. Townsend

14.122 Microeconomic Theory II  
Prereq: 14.121, permission of instructor  
G (Fall; second half of term)  
3-0-3 units  
Introduction to game theory. Topics include normal form and extensive form games, and games with incomplete information. Enrollment limited.  
M. Yildiz

14.123 Microeconomic Theory III  
Prereq: 14.121, 14.122, permission of instructor  
G (Spring; first half of term)  
3-0-3 units  
Models of individual decision-making under certainty and uncertainty. Additional topics in game theory. Enrollment limited.  
D. Fudenberg

14.124 Microeconomic Theory IV  
Prereq: 14.123 or permission of instructor  
G (Spring; second half of term)  
3-0-3 units  
Introduction to statistical decision theory, incentive contracting (moral hazard and adverse selection), mechanism design and incomplete contracting. Enrollment limited.  
B. Holmstrom

14.125 Market Design  
Prereq: 14.124  
G (Spring)  
4-0-8 units  
Theory and practice of market design, building on ideas from microeconomics, game theory and mechanism design. Prominent case studies include auctions, labor markets, school choice, prediction markets, financial markets, and organ exchange clearinghouses.  
P. Pathak

14.126 Game Theory  
Prereq: 14.122  
G (Spring)  
3-0-9 units  
Rigorous investigation of the evolutionary and epistemic foundations of solution concepts, such as rationalizability and Nash equilibrium. Covers classical topics, such as repeated games, bargaining, and supermodular games as well as new topics such as global games, heterogeneous priors, psychological games, and games without expected utility maximization. Applications provided when available.  
D. Fudenberg, M. Yildiz

14.129 Advanced Contract Theory  
Prereq: 14.121, 14.281, or permission of instructor  
G (Spring; second half of term)  
3-0-3 units  
Recent developments in contract theory. Includes advanced models of moral hazard, adverse selection, mechanism design and incomplete contracts with applications to theory of the firm, organizational design, and financial structure.  
Consult R. Townsend

14.13 Psychology and Economics  
Prereq: 14.01  
U (Fall)  
4-0-8 units. HASS-S  
Introduces the theoretical and empirical literature of behavioral economics. Examines important and systematic departures from the standard models in economics by incorporating insights from psychology and other social sciences. Covers theory and evidence on time, risk, and social preferences; beliefs and learning; emotions; limited attention; and frames, defaults, and nudges. Studies applications to many different areas, such as credit card debt, procrastination, retirement savings, addiction, portfolio choice, poverty, labor supply, happiness, and government policy. Students participate in surveys and experiments in class, review evidence from lab experiments, examine how the results can be integrated into models, and test models using field and lab data.  
F. Schilbach
14.130 Reading Economic Theory (New)
Prereq: 14.121, 14.451
G (Fall)
2-0-10 units
Can be repeated for credit.

Class will read and discuss current research in economic theory with a focus on game theory, decision theory, and behavioral economics. Students will be expected to make one presentation and to read and post comments on every paper by the day before the paper is presented. Permission of the instructor required, and auditors are not allowed.
D. Fudenberg

14.137[J] Psychology and Economics
Same subject as 9.822[J]
Prereq: None
G (Spring)
4-0-8 units

Examines "psychology appreciation" for economics students. Aims to enhance knowledge and intuition about psychological processes in areas relevant to economics. Increases understanding of psychology as an experimental discipline, with its own distinct rules and style of argument. Topics include self-knowledge, cognitive dissonance, self-deception, emotions, social norms, self-control, learning, mental accounting, memory, individual and group behavior, and some personality and psychoanalytic models. Within each of these topics, we showcase effective and central experiments and discuss their role in the development of psychological theory. Term paper required.
D. Prelec

14.147 Topics in Game Theory
Prereq: 14.126
G (Spring)
4-0-8 units

Advanced subject on topics of current research interest.
M. Yildiz

14.15[J] Networks
Same subject as 6.207[J]
Prereq: 6.041B or 14.30
U (Spring)
4-0-8 units. HASS-S

Highlights common principles that permeate the functioning of diverse technological, economic and social networks. Utilizes three sets of tools for analyzing networks--random graph models, optimization, and game theory--to study informational and learning cascades; economic and financial networks; social influence networks; formation of social groups; communication networks and the Internet; consensus and gossiping; spread and control of epidemics; control and use of energy networks; and biological networks.
D. Shah

14.16 Strategy and Information
Prereq: 14.01 or permission of instructor
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Spring)
4-0-8 units. HASS-S

Advanced course in game theory provides rigorous overview of equilibrium concepts for non-cooperative games in static and dynamic settings. Covers iterated strict dominance, rationalizability, Nash equilibrium, subgame perfection, sequential, perfect and proper equilibria, the intuitive criterion, and iterated weak dominance. Applications to auctions, bargaining, and repeated games. Introduces solution concepts for cooperative games and their non-cooperative implementations, as well as matching theory.
Consult Department Headquarters

14.160 Behavioral Economics
Prereq: 14.122
G (Fall)
4-0-8 units

Covers recent theory and empirical evidence in behavioral economics. Topics include deviations from the neoclassical model in terms of (i) preferences (present bias, reference dependence, social preferences), (ii) beliefs (overconfidence, projection bias), and (iii) decision-making (cognition, attention, framing, persuasion), as well as (iv) market reactions to such deviations. Applications will cover a large range of fields, including labor and public economics, industrial organization, health economics, finance, and development economics.
G. Rao, F. Schilbach
14.18 Mathematical Economic Modeling
Prereq: 14.04, 14.12, 14.15[J], or 14.19
U (Spring)
4-0-8 units. HASS-S

Guides students through the process of developing and analyzing formal economic models and effectively communicating their results. Topics include decision theory, game theory, voting, and matching. Instruction and practice in oral and written communication provided. Prior coursework in microeconomic theory and/or proof-based mathematics required.

A. Wolitzky

14.19 Market Design
Prereq: 14.01
U (Spring)
4-0-8 units. HASS-S

Covers the design and operation of organized markets, building on ideas from microeconomic and game theory. Topics may include mechanism design, auctions, matching markets, and other resource allocation problems.

P. Pathak

14.191 Independent Research Paper
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
0-12-0 units
Can be repeated for credit.

Under supervision of a faculty member approved by Graduate Registration Officer, student writes a substantial, probably publishable research paper. Must be completed by the end of a student’s second year to satisfy the departmental minor requirement.

Staff

14.193 Advanced Seminar in Economics
Prereq: 14.121, 14.451
G (Fall, Spring, Summer)
Units arranged
Can be repeated for credit.

Reading and discussion of current topics in economics. Open to advanced graduate students by arrangement with individual members of the staff.

O. Blanchard

14.195 Reading Seminar in Economics
Prereq: 14.121
G (Fall, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Reading and discussion of current topics in economics. Open to advanced graduate students by arrangement with individual members of the staff.

Staff

14.197 Independent Research
Prereq: None
G (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Under supervision of a faculty member approved by Graduate Registration Officer, student conducts independent research.

Staff

14.198, 14.199 Teaching Introductory Economics
Prereq: None
G (Fall, Spring)
2-0-2 units
Can be repeated for credit.

Required of teaching assistants in introductory economics (14.01 and 14.02), under supervision of the faculty member in charge of the subject.

14.198: J. Gruber, J. Harris
14.199: R. Caballero, J. Poterba

Industrial Organization

14.20 Industrial Organization and Competitive Strategy
Prereq: 14.01
U (Spring)
4-0-8 units. HASS-S

Analyzes the behavior and performance of firms in markets, with a particular focus on strategic interactions. Topics include monopoly power, behavior of firms in oligopoly markets, static and dynamic measurement of market performance, pricing and product choice decisions, advertising, research and development, and theory of the firm. Requires attendance and team participation in a Competitive Strategy Game.

N. Rose
### 14.21 Health Economics
Prereq: 14.01  
U (Spring)  
3-0-9 units. HASS-S
Applies theoretical and empirical tools of economics to problems of health and medical care delivery. Concentrates on selected topics such as decision-making under uncertainty, cost-benefit analysis, health insurance, physician remuneration, government regulation, health care systems of developing countries, and the economics of AIDS.  
*J. E. Harris*

### 14.26 Economics of Incentives: Theory and Applications
Prereq: 14.01  
U (Spring)  
4-0-8 units. HASS-S
Provides a rigorous, but not overly technical introduction to the economic theory of incentives and organization together with a varying set of applications. These include, among others, the optimal design of sales and CEO incentive schemes; the impact of incentives on risk taking and innovation; tournament design; the analysis of venture capital and other forms of financial incentive contracts; relational and behavioral aspects of incentive contracts; and various organizational design problems.  
*B. Holmstrom*

### 14.27 Economics and E-Commerce
Prereq: 14.01; 6.041B or 14.30  
Acad Year 2017-2018: Not offered  
Acad Year 2018-2019: U (Fall)  
4-0-8 units. HASS-S
Uses theoretical economic models and empirical evidence to help understand the growth and future of e-commerce. Economic models help frame class discussions of, among other topics, content provision, privacy, piracy, sales taxation, group purchasing, price search, and advertising on the internet. Empirical project and paper required.  
*Consult S. Ellison*

### 14.271 Industrial Organization I
Prereq: 14.04  
G (Fall)  
5-0-7 units
Covers theoretical and empirical work dealing with the structure, behavior, and performance of firms and markets and core issues in antitrust. Topics include: the organization of the firm, monopoly, price discrimination, oligopoly, and auctions. Theoretical and empirical work are integrated in each area.  
*N. Agarwal, M. Whinston*

### 14.272 Industrial Organization II
Prereq: 14.271  
G (Spring)  
5-0-7 units
A continuation of 14.271. Topics covered include horizontal mergers and demand estimation, vertical integration and vertical restraints, natural monopoly and its regulation, public enterprise, political economy of regulation, network access pricing, deregulation of telecommunications, electric power, cable television, transportation sectors, and risk and environmental regulation.  
*N. Rose, M. Whinston*

### 14.273 Advanced Topics in Industrial Organization
Prereq: 14.271  
G (Spring)  
5-0-7 units
Empirical analysis of theoretically derived models of market behavior. Varied topics include demand estimation, differentiated products, production functions, analysis of market power, entry and exit, vertical relationships, auctions, matching markets, network externalities, dynamic oligopoly, moral hazard and adverse selection. Discussion will focus on methodological issues, including identification, estimation, counter-factual analysis and simulation techniques.  
*N. Agarwal, M. Igami*

### 14.281 Contract Economics
Prereq: 14.124  
G (Fall)  
4-0-8 units
Covers theoretical research on contracts in static as well as dynamic settings. Emphasis is on canonical models in contracting (agency theory, mechanism design, incomplete contracting) illustrated by major areas of application (e.g. compensation, labor and capital markets, property rights, organizational design, corporate finance).  
*J. Toikka*

### 14.282 Introduction to Organizational Economics
Prereq: 14.124  
G (Fall)  
5-0-7 units
 Begins with survey of contract theory for organizational economists, then introduces the main areas of the field, including the boundary of the firm; decision-making, employment, structures and processes in organizations; and organizations other than firms.  
*R. Gibbons, J. Van Reenen*
14.283 Advanced Topics in Organizational Economics I
Prereq: 14.282
G (Spring; first half of term)
2-0-4 units
Builds on the work done in 14.282 to develop more in-depth analysis of topics in the field.
R. Gibbons

14.284 Advanced Topics in Organizational Economics II
Prereq: 14.282
G (Spring; second half of term)
2-0-4 units
Builds on the work done in 14.282 to develop more in-depth analysis of topics in the field.
J. Van Reenen

Statistics and Econometrics

14.30 Introduction to Statistical Methods in Economics
Subject meets with 14.300
Prereq: Calculus II (GIR)
U (Fall)
4-0-8 units. REST
Self-contained introduction to probability and statistics with some economic applications. Elements of probability theory, sampling theory, statistical estimation, and hypothesis testing. Students taking graduate version complete additional assignments. May not count toward HASS requirement.
A. Abadie, W. Newey

14.310 Data Analysis for Social Scientists
Subject meets with 14.31
Prereq: None
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: G (Spring)
4-0-8 units
Introduces methods for harnessing data to answer questions of cultural, social, economic, and policy interest. Presents essential notions of probability and statistics. Covers techniques in modern data analysis: regression and econometrics, prediction, design of experiment, randomized control trials (and A/B testing), machine learning, data visualization, analysis of network data, and geographic information systems. Projects include analysis of data with a written description and interpretation of results; may involve gathering of original data or use of existing data sets. Applications drawn from real world examples and frontier research. Instruction in use of the statistical package R. Students taking graduate version complete additional assignments.
Consult Department Headquarters

14.31 Data Analysis for Social Scientists
Subject meets with 14.310
Prereq: Calculus I (GIR)
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Spring)
4-0-8 units. Institute LAB
Introduces methods for harnessing data to answer questions of cultural, social, economic, and policy interest. Presents essential notions of probability and statistics. Covers techniques in modern data analysis: regression and econometrics, prediction, design of experiment, randomized control trials (and A/B testing), machine learning, data visualization, analysis of network data, and geographic information systems. Projects include analysis of data with a written description and interpretation of results; may involve gathering of original data or use of existing data sets. Applications drawn from real world examples and frontier research. Instruction in use of the statistical package R. Students taking graduate version complete additional assignments.
Consult Department Headquarters

A. Abadie, W. Newey
14.32 Econometric Data Science
Prereq: 14.30
U (Fall, Spring)
4-4-4 units. Institute LAB

Introduces multiple regression methods for causal inference and descriptive analysis in economics and related disciplines. Extensions include instrumental variables methods, analysis of randomized experiments and quasi-experimental research designs, and regression with time series data. Develops the skills needed to conduct - and critique - empirical studies in economics and related fields. Students complete an empirical project with a written description and interpretation of results; this may involve original data collection or use of existing data sets. Applications drawn from real-world examples and frontier research. Familiarity with statistical programming languages is helpful.

Fall: A. Mikusheva
Spring: J. Angrist

14.33 Research and Communication in Economics: Topics, Methods, and Implementation
Prereq: 14.01, 14.02, 14.32
U (Fall, Spring)
3-4-5 units. Institute LAB

Exposes students to the process of conducting independent research in empirical economics and effectively communicating the results of the research. Emphasizes econometric analysis of an assigned economic question and culminates in each student choosing an original topic, performing appropriate analysis, and delivering oral and written project reports.

Fall: G. Chodorow-Reich
Spring: S. Jaeger

14.36 Advanced Econometrics
Subject meets with 14.387
Prereq: 14.32
U (Spring)
4-0-8 units

Emphasizes econometric theory, methods, and applications using regression, instrumental variables, differences-in-differences, regression discontinuity designs, machine learning and big data sets, and problems related to standard errors and statistical inference. Includes a project with a theoretical, written and data-analytic component. Familiarity with Stata or a similar statistical programming language recommended. Students taking graduate version complete additional assignments.

J. Angrist, V. Chernozhukov

14.381 Statistical Method in Economics
Prereq: Calculus II (GIR), permission of instructor
G (Fall)
5-0-7 units

Introduction to probability and statistics as background for advanced econometrics and introduction to the linear regression model. Covers elements of probability theory; sampling theory; asymptotic approximations; decision-theory approach to statistical estimation focusing on regression, hypothesis testing; and maximum-likelihood methods. Includes simple and multiple regression, estimation and hypothesis testing. Illustrations from economics and application of these concepts to economic problems. Enrollment limited.

A. Mikusheva, W. Newey

14.382 Econometrics
Prereq: 14.381 or permission of instructor
G (Spring)
5-0-7 units

Covers key models as well as identification and estimation methods used in modern econometrics. Presents modern ways to set up problems and do better estimation and inference than the current empirical practice. Introduces generalized method of moments and the method of M-estimators in addition to more modern versions of these methods dealing with important issues, such as weak identification or biases arising in high dimensions. Also discusses the bootstrap and explores very high dimensional formulations, or “big data.” Students gain practical experience by applying the methods to real data sets. Enrollment limited.

V. Chernozhukov

14.384 Time Series Analysis
Prereq: 14.382 or permission of instructor
G (Fall)
5-0-7 units

Studies theory and application of time series methods in econometrics, including spectral analysis, estimation with stationary and non-stationary processes, VARs, factor models, unit roots, cointegration, estimation of DSGE models, and Bayesian methods. Enrollment limited.

A. Mikusheva
14.385 Nonlinear Econometric Analysis  
Prereq: 14.382 or permission of instructor  
G (Fall)  
5-0-7 units  
Studies micro-econometric models, including large sample theory for estimation and hypothesis testing, generalized method of moments, estimation of censored and truncated specifications, quantile regression, structural estimation, nonparametric and semiparametric estimation, panel data, bootstrapping, and simulation methods. Methods illustrated with economic applications. Enrollment limited.  
A. Abadie, W. Newey

14.386 New Econometric Methods  
Prereq: 14.382  
G (Spring)  
4-0-8 units  
Focuses on recent developments in econometrics, especially structural estimation. Topics include nonseparable models, models of imperfect competition, auction models, duration models, and nonlinear panel data. Results illustrated with economic applications.  
A. Abadie, W. Newey

14.387 Applied Econometrics  
Subject meets with 14.36  
Prereq: 14.382  
G (Spring)  
4-0-8 units  
Emphasizes econometric theory, methods, and applications using regression, instrumental variables, differences-in-differences, regression discontinuity designs, machine learning and big data sets, and problems related to standard errors and statistical inference. Includes a project with a theoretical, written and data-analytic component. Students taking graduate version complete additional assignments.  
J. Angrist, V. Chernozhukov

14.389 Econometrics Paper  
Prereq: 14.382 or 14.32  
G (IAP)  
0-0-3 units  
Paper in econometrics required of all PhD candidates. Paper due at the end of IAP.  
A. Abadie

14.391 Workshop in Economic Research  
Prereq: 14.124, 14.454  
G (Fall)  
2-0-10 units  
Can be repeated for credit.  
Develops research ability of students through intensive discussion of dissertation research as it proceeds, individual or group research projects, and critical appraisal of current reported research. Workshops divided into various fields, depending on interest and size.  
Staff

14.392 Workshop in Economic Research  
Prereq: 14.124, 14.454  
G (Spring)  
2-0-10 units  
Can be repeated for credit.  
Develops research ability of students through intensive discussion of dissertation research as it proceeds, individual or group research projects, and critical appraisal of current reported research. Workshops divided into various fields, depending on interest and size.  
Staff

National Income and Finance

14.41 Public Finance and Public Policy  
Subject meets with 14.410  
Prereq: 14.01  
U (Fall)  
4-0-8 units. HASS-S  
Explores the role of government in the economy, applying tools of basic microeconomics to answer important policy questions such as government response to global warming, school choice by K-12 students, Social Security versus private retirement savings accounts, government versus private health insurance, setting income tax rates for individuals and corporations. Students taking the graduate version complete additional assignments.  
J. Gruber
14.410 Public Finance and Public Policy
Subject meets with 14.41
Prereq: 14.01
G (Fall)
4-0-8 units

Explores the role of government in the economy, applying tools of basic microeconomics to answer important policy questions such as government response to global warming, school choice by K-12 students, Social Security versus private retirement savings accounts, government versus private health insurance, setting income tax rates for individuals and corporations. Students taking the graduate version complete additional assignments.
J. Gruber

Same subject as 15.470[J]
Prereq: None
G (Fall)
4-0-8 units

See description under subject 15.470[J].
L. Kogan, J. Wang

14.42 Environmental Policy and Economics
Subject meets with 14.420
Prereq: 14.01
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Spring)
4-0-8 units. HASS-S

Investigates the proper role of government in the regulation of the environment. Presents tools necessary to estimate the costs and benefits of a variety of environmental policies. Focuses on both conceptual thinking and quantitative evaluation of environmental issues. Gives particular attention to climate change: defines the major concepts underlying the climate problem; examines the measurement of climate damages as well as the costs of mitigating them; and discusses the various policy options available to communities, countries, and international coalitions. Completion of 14.30 or equivalent statistics subject strongly recommended. Students taking graduate version complete additional assignments.
Consult Department Headquarters

14.420 Environmental Policy and Economics
Subject meets with 14.42
Prereq: 14.01
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: G (Spring)
4-0-8 units

Investigates the proper role of government in the regulation of the environment. Presents tools necessary to estimate the costs and benefits of a variety of environmental policies. Focuses on both conceptual thinking and quantitative evaluation of environmental issues. Gives particular attention to climate change: defines the major concepts underlying the climate problem; examines the measurement of climate damages as well as the costs of mitigating them; and discusses the various policy options available to communities, countries, and international coalitions. Completion of 14.30 or equivalent statistics subject strongly recommended. Students taking graduate version complete additional assignments.
J. Gruber

Same subject as 11.161[J], 15.031[J], 17.397[J], 21A.415[J]
Prereq: 14.01, 15.0111, or permission of instructor
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Fall)
4-0-8 units. HASS-S

See description under subject 15.031[J].
C. Warshaw

Same subject as 15.037[J]
Prereq: 14.01 or 15.0111
U (Spring)
4-0-8 units. HASS-S
Credit cannot also be received for 14.444[J], 15.038[J]

Analyzes business and public policy issues in energy markets and in the environmental markets to which they are closely tied. Examines the economic determinants of industry structure and evolution of competition among firms in these industries. Investigates successful and unsuccessful strategies for entering new markets and competing in existing markets. Industries studied include oil, natural gas, coal, electricity, and transportation. Topics include climate change and environmental policy, the role of speculation in energy markets, the political economy of energy policies, and market power and antitrust. Two team-based simulation games, representing the world oil market and a deregulated electricity market, act to cement the concepts covered in lecture. Students taking graduate version complete additional assignments. Limited to 60.
C. Knittel
Same subject as 15.473[J]  
Prereq: None  
G (Spring)  
3-0-9 units  
H. Chen, L. Kogan

14.441[J] Advanced Corporate Finance  
Same subject as 15.471[J]  
Prereq: None  
G (Spring)  
3-0-9 units  
See description under subject 15.471[J].

Same subject as 15.472[J]  
Prereq: None  
G (Fall)  
3-0-9 units  
D. Greenwald, J. Parker, A. Verdelhan

Same subject as 15.038[J]  
Prereq: 14.01 or 15.0111  
G (Spring)  
4-0-8 units  
Credit cannot also be received for 14.44[J], 15.037[J]  
Theoretical and empirical perspectives on individual and industrial demand for energy, energy supply, energy markets, and public policies affecting energy markets. Discusses aspects of the oil, natural gas, electricity, and nuclear power sectors. Examines energy tax, price regulation, deregulation, energy efficiency and policies for controlling pollution and CO₂ emissions. Students taking the graduate version complete additional assignments. Limited to 60.  
C. Knittel

Same subject as 15.473[J]  
Prereq: None  
G (Spring)  
3-0-9 units  
H. Chen, L. Kogan

Same subject as 15.038[J]  
Prereq: 14.01 or 15.0111  
G (Spring)  
4-0-8 units  
Credit cannot also be received for 14.44[J], 15.037[J]  
Theoretical and empirical perspectives on individual and industrial demand for energy, energy supply, energy markets, and public policies affecting energy markets. Discusses aspects of the oil, natural gas, electricity, and nuclear power sectors. Examines energy tax, price regulation, deregulation, energy efficiency and policies for controlling pollution and CO₂ emissions. Students taking the graduate version complete additional assignments. Limited to 60.  
C. Knittel

14.451 Dynamic Optimization Methods with Applications  
Prereq: 14.06, permission of instructor  
G (Fall; first half of term)  
3-0-3 units  
Provides an introduction to dynamic optimization methods, including discrete-time dynamic programming in non-stochastic and stochastic environments, and continuous time methods including the Pontryagin maximum principle. Applications may include the Ramsey model, irreversible investment models, and consumption choices under uncertainty. Enrollment limited.  
A. Simsek

14.452 Economic Growth  
Prereq: 14.451, permission of instructor  
G (Fall; second half of term)  
3-0-3 units  
Introduces the sources and modeling of economic growth and income differences across nations. Topics include an introduction to dynamic general equilibrium theory, the neoclassical growth model, overlapping generations, determinants of technological progress, endogenous growth models, measurement of technological progress, the role of human capital in economic growth, and growth in a global economy. Enrollment limited.  
D. Acemoglu

14.453 Economic Fluctuations  
Prereq: 14.452, permission of instructor  
G (Spring; first half of term)  
3-0-3 units  
Investigation of why aggregate economic activity fluctuates, and the role of policy in affecting fluctuations. Topics include the link between monetary policy and output, the economic cost of aggregate fluctuations, the costs and benefits of price stability, and the role of central banks. Introduction to real business cycle and new Keynesian models. Enrollment limited.  
G. M. Angeletos

14.454 Economic Crises  
Prereq: 14.453, permission of instructor  
G (Spring; second half of term)  
3-0-3 units  
Provides an overview of models of the business cycle caused by financial markets’ frictions and shocks. Topics include credit crunch, collateral shocks, bank runs, contagion, speculative bubbles, credit booms, leverage, safe asset shortages, capital flows and sudden stops. Enrollment limited.  
R. Caballero
14.46 Innovation Policy and the Economy (New)
Prereq: None
U (Spring)
4-0-8 units. HASS-S; CI-H

Designed for students interested in how to best design innovation-related public policies. Addresses questions such as whether the patent system helps or hinders innovation, how the US National Institutes of Health (NIH) should allocate its funding across diseases, and whether the US would benefit from raising caps on the employment of skilled immigrants through the H-1B visa program. Presentations and writing assignments strengthen skills for effective communication.

H. Williams

14.461 Advanced Macroeconomics I
Prereq: 14.122, 14.452
G (Fall)
5-0-7 units

Advanced subject in macroeconomics that seeks to bring students to the research frontier. Topics vary from year to year, covering a wide spectrum of classical and recent research. Topics may include business cycles, optimal monetary and tax policy, monetary economics, banking, and financial constraints on investment and incomplete markets.

M. Beraja, I. Werning

14.462 Advanced Macroeconomics II
Prereq: 14.461
G (Spring)
5-0-7 units

Advanced topics in financial frictions and obstacles to trade; DSGE and micro founded macro models; analysis and design of financial systems; liquidity, payments systems, and monetary policy; intermediation, financial markets and platforms; business cycles, transitions, and financial crises; implementation and coordination game.

G. M. Angleton, R. Caballero

14.472 Public Economics II
Prereq: 14.471
G (Spring)
3-0-9 units

Theory and evidence on government expenditure policy and on regulatory and tax responses to problems of market failure. Focuses on social insurance programs such as social security and unemployment insurance, and on the causes and consequences of rising health expenditures.

A. Finkelstein

14.473 Public Policy in Health Economics
Prereq: 14.122
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: G (Spring)
4-0-8 units

Theory and evidence on the economics of the health care sector, with a particular emphasis on the economics of technological change and innovation.

Consult H. Williams

International, Interregional, and Urban Economics

14.54 International Trade
Prereq: 14.01, 14.02
U (Fall)
4-0-8 units. HASS-S

Introduction to the theory of international trade and finance with applications to current policy issues.

A. Costinot

14.581 International Economics I
Prereq: 14.04
G (Fall)
5-0-7 units

Theory of International trade and foreign investment with applications in commercial policy.

A. Costinot, D. Donaldson

14.582 International Economics II
Prereq: 14.06
G (Spring)
5-0-7 units

Covers international capital flows, exchange rate fluctuations, global capital markets, emerging markets, crises, sovereign debt, international financial architecture, and bubbles.

A. Costinot, D. Donaldson
**Labor Economics and Industrial Relations**

**14.64 Labor Economics and Public Policy**  
Prereq: 14.30 or permission of instructor  
Acad Year 2017-2018: Not offered  
Acad Year 2018-2019: U (Spring)  
4-0-8 units. HASS-S  
Provides an introduction to the labor market, how it functions, and the important role it plays in people's lives. Topics include supply and demand, minimum wages, labor market effects of social insurance and welfare programs, the collective bargaining relationship, discrimination, human capital, and unemployment. Completion of or concurrent enrollment in 14.03 or 14.04 recommended.

*J. Angrist*

**14.661 Labor Economics I**  
Prereq: 14.04, 14.32  
G (Fall)  
5-0-7 units  
A systematic development of the theory of labor supply, labor demand, and human capital. Topics include wage and employment determination, turnover, search, immigration, unemployment, equalizing differences, and institutions in the labor market. Particular emphasis on the interaction between theoretical and empirical modeling.

*D. Acemoglu, J. Angrist*

**14.662 Labor Economics II**  
Prereq: 14.04, 14.32  
G (Spring)  
5-0-7 units  
Theory and evidence on the determinants of earnings levels, inequality, intergenerational mobility, skill demands, and employment structure. Particular focus on the determinants of worker- and firm-level productivity; and the roles played by supply, demand, institutions, technology and trade in the evolving distribution of income.

*D. Autor, S. Jager*

**Economic History**

**14.70[j] Medieval Economic History in Comparative Perspective**  
Same subject as 21H.134[j]  
Prereq: None  
U (Fall)  
3-0-9 units. HASS-S; CI-H  
See description under subject 21H.134[j].

*S. Bobrycki*

**14.73 The Challenge of World Poverty**  
Prereq: None  
U (Fall)  
4-0-8 units. HASS-S; CI-H  
Designed for students who are interested in the challenge posed by massive and persistent world poverty. Examines extreme poverty over time to see if it is no longer a threat, why some countries grow fast and others fall further behind, if growth or foreign aid help the poor, what we can do about corruption, if markets or NGOs should be left to deal with poverty, where to intervene, and how to deal with the disease burden and improve schools.

*N. Lane, F. Schilbach*

**Economic Development**

**14.74 Foundations of Development Policy**  
Subject meets with 14.740  
Prereq: 14.01, 14.30  
U (Fall)  
4-0-8 units. HASS-S  
Explores the foundations of policy making in developing countries. Goal is to spell out various policy options and to quantify the trade-offs between them. Special emphasis on education, health, gender, fertility, adoption of technological innovation, and the markets for land, credit, and labor. Students taking the graduate version complete additional assignments.

*D. Donaldson, B. Olken*

**14.740 Foundations of Development Policy**  
Subject meets with 14.74  
Prereq: 14.01, 14.30  
G (Fall)  
4-0-8 units  
Explores the foundations of policy making in developing countries. Goal is to spell out various policy options and to quantify the trade-offs between them. Special emphasis on education, health, gender, fertility, adoption of technological innovation, and the markets for land, credit, and labor. Students taking the graduate version complete additional assignments.

*D. Donaldson, B. Olken*
14.75 Political Economy and Economic Development
Prereq: 14.01, 14.30
Acad Year 2017-2018: Not offered
Acad Year 2018-2019: U (Fall)
4-0-8 units. HASS-S

Explores the relationship between political institutions and economic development, covering key theoretical issues as well as recent empirical evidence. Topics include corruption, democracy, dictatorship, and war. Discusses not just what we know on these topics, but how we know it, covering how to craft a good empirical study or field experiment and how to discriminate between reliable and unreliable evidence.
*Consult B. Olken*

14.770 Introduction to Collective Choice and Political Economy
Prereq: None
G (Fall)
4-0-8 units

Broad introduction to political economy. Covers topics from social choice theory to political agency models, including theories of voter turnout and comparison of political institutions.
*D. Acemoglu, B. Olken*

14.771 Development Economics: Microeconomic Issues
Prereq: 14.121, 14.122
G (Fall)
5-0-7 units

A rigorous introduction to core micro-economic issues in economic development, focusing on both key theoretical contributions and empirical applications to understand both why some countries are poor and on how markets function differently in poor economies. Topics include human capital (education and health); labor markets; credit markets; land markets; firms; and the role of the public sector.
*B. Faber, B. Olken*

14.772 Development Economics: Macroeconomics
Prereq: 14.121, 14.451
G (Spring)
5-0-7 units

Dynamic models of growth and development emphasizing migration, modernization, risk and finance, and technological change; static and dynamic models of political economy; the dynamics of income distribution and institutional change; SME and larger firm structure in developing countries; development, transparency, and information systems; and functioning of financial markets and institutions in emerging markets, their design and regulation.
*R. Townsend*

14.773 Political Economy: Institutions and Development
Prereq: 14.121, 14.451
G (Spring)
5-0-7 units

Economists and policymakers increasingly realize the importance of political institutions in shaping economic performance, especially in the context of understanding economic development. Work on the determinants of economic policies and institutions is in its infancy, but is growing rapidly. Subject provides an introduction to this area. Topics covered: the economic role of institutions; the effects of social conflict and class conflict on economic development; political economic determinants of macro policies; political development; theories of income distribution and distributional conflict; the efficiency effects of distributional conflict; the causes and consequences of corruption; the role of colonial history; and others. Both theoretical and empirical approaches discussed. Subject can be taken either as part of the Development Economics or the Positive Political Economy fields.
*D. Acemoglu, L. Fergusson*

14.781[J] Political Economy I: Theories of the State and the Economy
Same subject as 15.678[J], 17.100[J]
Prereq: Permission of instructor
G (Spring)
3-0-9 units

See description under subject 17.100[J].
*M. Piore, S. Berger*

14.999 Topics in Inequality
Prereq: 14.452
G (Spring)
Not offered regularly; consult department
2-0-4 units

Addresses empirical and theoretical issues of inequality from various perspectives, such as macroeconomic, labor, public finance, and political economy.
*Consult D. Autor*

14.THG Graduate Thesis
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.

Program of research and writing of thesis; to be arranged by the student with supervising committee.
*Staff*
**14.THU Thesis**
Prereq: 14.33
U (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.

Program of research and writing of thesis.

*Staff*

**14.UR Undergraduate Research**
Prereq: 14.02
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Participation in research with an individual faculty member or research group, independent research or study under the guidance of a faculty member. Admission by arrangement with individual faculty member.

*Consult A. Mikusheva*

**14.URG Undergraduate Research**
Prereq: 14.02
U (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.

Participation in research with an individual faculty member or research group, independent research or study under the guidance of a faculty member. Admission by arrangement with individual faculty member.

*Consult A. Mikusheva*