Students must take three one-semester courses, chosen from three concentrations outside the field of concentration. The statistics requirement (two one-semester courses in statistics) may be used to satisfy one of the three requirements, except for students concentrating in evaluative science and statistics.

**DECISION SCIENCES**

**ECONOMICS**

**ETHICS**

**EVALUATIVE SCIENCE AND STATISTICS**

**MANAGEMENT**

**POLITICAL ANALYSIS**

Courses that satisfy the requirement include, but are not restricted to, the courses listed below. *Note:* In order for a course to count for a distribution requirement in the Harvard PhD in Health Policy Program, a student must take the equivalent of a 4-unit FAS course in that concentration. At HSPH, 5 credits is equivalent to a 4-unit FAS course; at HBS, a 3-credit MBA course is equivalent to a one-semester FAS course. For more information about credit conversions, see: [https://courses.harvard.edu/credit_conversion](https://courses.harvard.edu/credit_conversion)

**DECISION SCIENCES**

**RDS 280. Decision Analysis for Health and Medical Practices [SPH]**
Ankur Pandya  
Fall 2; TuTh 2-3:30  
2.5 credits SPH = 2 credits FAS  
This course is designed to introduce the student to the methods and growing range of applications of decision analysis and cost-effectiveness analysis in health technology assessment, medical and public health decision making, and health resource allocation. The objectives of the course are: (1) to provide a basic technical understanding of the methods used, (2) to give the student an appreciation of the practical problems in applying these methods to the evaluation of clinical interventions and public health policies, and (3) to give the student an appreciation of the uses and limitations of these methods in decision making at the individual, organizational, and policy level both in developed and developing countries.  
*Course Note:* Introductory economics is recommended but not required.

**RDS 282. Economic Evaluation of Health Policy & Program Management [SPH]**
Stephen Resch  
Spring 2; MW 2-3:30  
2.5 credits SPH = 2 credits FAS  
This course features case studies in the application of health decision science to policymaking and program management at various levels of the health system. Both developed and developing country contexts will be covered. Topics include: [1] theoretical foundations of cost-effectiveness analysis (CEA); [2] controversies and limitations of CEA in practice; [3] design and implementation of tools and protocols for measurement and valuation of cost and benefit of health programs; [4] integration of evidence of economic value into strategic planning and resource allocation decisions, performance monitoring and program evaluation; [5] the role of evidence of economic value in the context of other stakeholder criteria and political motivations.  
*Course Prerequisites:* Students must have taken RDS280 or RDS286. Prior coursework in Microeconomics is recommended.

*Every attempt was made to include current course descriptions in this listing. Students are urged to consult the most recent versions of Harvard catalogs available on the schools’ web pages.*
RDS 284. Decision Theory [SPH]
James Hammitt
Fall; MW 11:30-1
5 credits SPH = 4 credits FAS
Introduces the standard model of decision-making under uncertainty, its conceptual foundations, challenges, alternatives, and methodological issues arising from the application of these techniques to health issues. Topics include von Neumann-Morgenstern and multi-attribute utility theory, Bayesian statistical decision theory, stochastic dominance, the value of information, judgment under uncertainty and alternative models of probability and decision making (regret theory, prospect theory, generalized expected utility). Applications are to preferences for health and aggregation of preferences over time and across individuals.

RDS 285. Decision Analysis Methods in Public Health and Medicine [SPH]
Nicolas Menzies
Spring 1; MW 2-3:30
2.5 credits SPH = 2 credits FAS
An intermediate-level course on methods and health applications of cost-effectiveness analysis and decision analysis modeling techniques. Topics include Markov models, microsimulation models, life expectancy estimation, cost estimation, deterministic and probabilistic sensitivity analysis, value of information analysis, and cost-effectiveness analysis.
Course Note: Familiarity with matrix algebra and elementary calculus may be helpful but not required; lab or section times to be announced at first meeting.

Richard Zeckhauser
Fall; TuTh 10:15-11:30; Review F 2:45-4
4 credits HKS = 4 credits FAS
This course develops abilities in using analytic frameworks in the formulation and assessment of public policies. It considers a variety of analytic techniques, particularly those directed toward uncertainty and interactive decision problems. It emphasizes the application of techniques to policy analysis, not formal derivations. Students encounter case studies, methodological readings, modeling of current events, the computer, a final exam, and challenging problem sets.
Prerequisites: An understanding of intermediate-level microeconomic theory and introductory techniques of optimization and decision analysis; API-101, API-102, or equivalent.
Economics 1011a. Microeconomic Theory: Advanced [FAS]
Edward Glaeser
Fall; TuTh 11:30-1
4 credits FAS
Economics 1011a is similar to Economics 1010a, but more mathematical and covers more material. The course teaches the basic tools of economics and to apply them to a wide range of human behavior.
Note: Economics 1011a fulfills the intermediate microeconomic theory requirement for Economics concentrators. Students may take either Economics 1010a or Economics 1011a for credit. This course, when taken for a letter grade, meets the General Education requirement for Empirical and Mathematical Reasoning or the Core area requirement for Social Analysis.
Prerequisite: Mathematics 21a or permission of the instructor.

Joseph P. Newhouse
Fall; MW 8:45-10; Review F 10:15-11:30
4 credits FAS = 4 credits HKS
Policy issues related to the following: the demand for medical care services, especially as a function of insurance; the demand for insurance and issues of selection; reimbursement policies of Medicare and other payers toward health plans, hospitals, and physicians; effects of health maintenance organizations and managed care; and malpractice and tort reform. Focus on federal policy, although state and local perspectives will receive some attention.
Note: Students may not take both Economics 1460 and Quantitative Reasoning 24: Health Economics and Policy for credit. Offered jointly with the Kennedy School as SUP-572. This course offers an optional writing requirement which if completed will satisfy the concentration writing requirement.
Prerequisite: Economics 1010a or 1011a. A statistics course is highly desirable.

*Economics 2020A. Microeconomic Theory I [FAS]
Maciej Kotowski
Fall; MW 8:45-10, Review F
4 credits FAS
A comprehensive course in economic theory designed for doctoral students in all parts of the university. Topics include consumption, production, behavior toward risk, markets, and general equilibrium theory. Also looks at applications to policy analysis, business decisions, industrial organization, finance, and the legal system. Undergraduates with appropriate background are welcome, subject to the instructor’s approval.
Note: Students may receive credit for both API-111 and API-101/API-105 only if API-101/105 is taken first. API-111 and API-109 cannot both be taken for credit. Also offered by Harvard Kennedy School as API-111 and by the Business School as HBS 4010. Please note the first day of class for Econ 2020a will be Friday, September 5, 2014. For the rest of the semester the course will be taught on its regular days, Monday and Wednesdays.
Prerequisite: Multivariate calculus and one course in probability theory. Thorough background in microeconomic theory at the intermediate level.

*Economics 2020B. Microeconomic Theory II [FAS]
Christopher Avery and Elon Kohlberg
Spring; MW 8:45-10, Review F 8:45-10
4 credits FAS
A continuation of Economics 2020A. Topics include game theory, economics of information, incentive theory, and welfare economics.
Note: Offered jointly with the Kennedy School as API-112 and with the Business School as 4011.
Prerequisite: Economics 2010a or 2020a.
API 101. Markets and Market Failure [HKS]
Four sections*: B- Janina Matuszeski, C- David Ellwood, D- Pinar Dogan, Z- Christopher Avery
Fall; MW 10:15-11:30; F Review 8:45-10 (B) and 10:15-11:30 (C,D,Z)
4 credits HKS = 4 credits FAS
This course applies microeconomic reasoning to public issues, policies, and programs. It considers economic
incentives and organizations; models of economic behavior, including markets, the absence of markets, and
interventions in markets; the price system and how it works; and policy objectives and instruments. All sections
cover a common set of core topics; the pedagogical approaches vary with the individual instructor.
Prerequisite: The Z section of this course presumes the ability to use basic calculus.
*The PhD Program in Health Policy strongly recommends Section Z.

Richard Zeckhauser
Fall; TuTh 10:15-11:30; Review F 2:45-4
4 credits HKS = 4 credits FAS
This course develops abilities in using analytic frameworks in the formulation and assessment of public policies. It
considers a variety of analytic techniques, particularly those directed toward uncertainty and interactive decision
problems. It emphasizes the application of techniques to policy analysis, not formal derivations. Students encounter
case studies, methodological readings, modeling of current events, the computer, a final exam, and challenging
problem sets.
Prerequisites: An understanding of intermediate-level microeconomic theory and introductory techniques of
optimization and decision analysis; API-101, API-102, or equivalent.

Leemore Dafny
Spring; TuTh 8:45-10; Review F 8:45-10
4 credits HKS = 4 credits FAS
The U.S. healthcare sector absorbs 17 percent of GDP, encompassing a diverse set of industries with public,
nonprofit, and for-profit buyers and sellers. Regulators have a substantial opportunity and obligation to promote
efficiency and competition in these various industries. This course will introduce participants to the key sectors
comprising the healthcare industry (including insurers, pharmaceuticals, and acute and non-acute care providers)
from the vantage point of the firms operating within them. We will discuss the impact of regulation (including
public insurance programs) on business strategies and outcomes, with a strong emphasis on competition policy (i.e.,
antitrust enforcement). Virtually all examples will be U.S.-based. We will discuss select developments in U.S.
healthcare reform over the past 8-9 years, with an emphasis on changes that affect the business of healthcare.
Course time will be split between lectures and case discussions. Readings must be completed before class due to the
interactive case-teaching method employed.
Prerequisites: Prior course in microeconomics. Statistics (through linear regression).

HPM 206. Economic Analysis [SPH]
David. Hemenway
Fall; MWF 11:30-1
5 credits SPH = 4 credits FAS
Designed to bring students to an intermediate-level understanding of microeconomic theory. Emphasizes the uses
and limitations of the economic approach, with applications to public health.
ETHICS

Sheila Jasanoff
Spring; M 4:15-7
4 credits FAS
Seeks to identify and explore salient ethical, legal, and policy issues - and possible solutions - associated with developments in biotechnology and the life sciences.

2652. Health Law, Policy, Bioethics, and Biotechnology Workshop [HLS]
I. Glenn Cohen
Fall, M 5-7
2 credits HLS = 2 credits FAS (However, if you write a research paper in the class, which is required of Petrie Flom Fellows, you will receive credit for a full distribution course, i.e. a 4-credit course in FAS).
This seminar will feature the presentation and discussion of cutting edge scholarship on health law, health policy, biotechnology and bioethics. The evaluation mechanism is that students must submit brief written comments on a number of the papers during the course. Because the papers are different every term, students can take the class as many times as they wish. Presenters will come from a wide range of disciplines and departments, and papers may feature doctrinal, economics, philosophical, political science, or other methods, but students need not have prior training in these disciplines. To determine whether this workshop is a good fit for their interests, students are encouraged to browse the listing of papers presented in past years that can be found here: http://petrieflom.law.harvard.edu/events/by-type/category/workshops

BEth 706. Health Law, Policy, and Bioethics [HMS]
Aaron Kesselheim and Brendan Abel
Spring; W 4-7
4 credits HMS = 4 credits FAS
This course is a survey-style introduction to legal topics in health policy and bioethics. It requires no experience in law, and topics covered could include legal aspects of the doctor-patient relationship, medical malpractice, privacy issues, health care finance, end-of-life issues, organ donation, disability, mental health, medical product regulation, and intellectual property. The course will not cover issues in reproductive ethics or human subjects research regulation. Students will be evaluated via primarily written work, but also by class participation. Sessions will be a mix of lecture and group discussion, with occasional guest speakers.

Stephen Marks
Spring 2; 3:45-7
2.5 credits SPH = 2 credits FAS
This course is designed to provide an overview of the way international institutions deal with health and human rights issues. Focus will be on the responses of the United Nations system, including the World Health Organization (WHO), regional organizations, and non-state actors to some of the pressing issues of health from a human rights perspective. Issues to be explored include: mother-to-child transmission of HIV and ARV drug pricing in Africa; traditional practices, such as female genital cutting (FGC); forced sterilization and rights of indigenous people in Latin America; accountability for mass violations of human rights; health of child workers; and international tobacco control. Among the international institutions to be examined are the WHO, UNAIDS, the World Trade Organization (WTO), UNESCO, the Council of Europe, the Organization of American States, the World Bank, and the International Criminal Court (ICC). The principal teaching method is simulation of actual cases, in which students prepare and present positions of various protagonists, based on research into those positions. The ultimate aim of the course is to prepare students to work for and interact professionally with international institutions to advance the health and human rights objectives, whether through governmental, intergovernmental or nongovernmental processes.
GHP 265. Ethics of Global Health Research [SPH]
Richard Cash Daniel Wikler
Spring 2; MW 3:45-5:15
2.5 credits SPH = 2 credits FAS
This course is designed to expose students to the key ethical issues that may be encountered in the course of conducting global health research. Using case presentations and discussion-based class sessions, students will have the opportunity to begin developing their own tools for dealing with these important issues in an applied context.

GHP 288. Issues in Health and Human Rights [SPH]
Stephen Marks
Fall 2; 3:45-7
2.5 credits SPH = 2 credits FAS
This course is designed to provide an overview of the way international institutions deal with health and human rights issues. Focus will be on the responses of the United Nations system, including the World Health Organization (WHO), regional organizations, and non-state actors to some of the pressing issues of health from a human rights perspective. Issues to be explored include: mother-to-child transmission of HIV and ARV drug pricing in Africa; traditional practices, such as female genital cutting (FGC); forced sterilization and rights of indigenous people in Latin America; accountability for mass violations of human rights; health of child workers; and international tobacco control. Among the international institutions to be examined are the WHO, UNAIDS, the World Trade Organization (WTO), UNESCO, the Council of Europe, the Organization of American States, the World Bank, and the International Criminal Court (ICC). The principal teaching method is simulation of actual cases, in which students prepare and present positions of various protagonists, based on research into those positions. The ultimate aim of the course is to prepare students to work for and interact professionally with international institutions to advance the health and human rights objectives, whether through governmental, intergovernmental or nongovernmental processes.

GHP 293. Individual and Social Responsibility for Health [SPH]
Daniel Wikler
Fall 2; TuTh 9:45-11:15
2.5 credits SPH = 2 credits FAS
The concept of responsibility for health plays a key role in health policy, but it is rarely articulated or evaluated. In this course, students will consider alternative understandings of assignments of responsibility for health to individuals, the state, the family, communities, nonprofit and for-profit firms, and other entities. They will identify their occurrences in health policy debates, assess the cogency of their use in ethical arguments in health policy, and trace the policy consequences of their normative analyses. The course will also serve as an introduction to ethical perspectives on public health.

ID 250. Ethical Basis of Public Health [SPH]
Nir Eyal and Ole Norheim
Fall 1; MW 8-9:30
2.5 credits SPH = 2 credits FAS
This course serves as an introduction to ethical issues in the practice of public health. Students will identify a number of key ethical issues and dilemmas arising in efforts to improve and protect population health and will become familiar with the principal arguments and evidence supporting contesting views. The class aims to enhance the students' capacity for using ethical reasoning in resolving the ethical issues that will arise throughout their careers.

Unlike courses in medical ethics, which mainly examine ethical dilemmas facing individual clinicians, the population-level focus of this course directs our attention to questions of ethics and justice that must be addressed at the societal level.

These include:
- What social response is required of a just society to the needs of its members for protecting and restoring health?
- Is population health something other than the aggregate of the health concerns of the individuals who make up a society at a given time? And what are the ethical implications of the answers?
• When are inequalities in health inequitable, and what priority should be assigned to reducing disparities in health when pursuing this goal might compromise the effort to maximize population health?
• Which ethical choices, if any, are unavoidable in developing the methodologies for measurement of health and of the global burden of disease?
• Which ethical choices if any are unavoidable in developing and using methods for priority-setting such as cost-effectiveness analysis and cost-benefit analysis? Are the ethical commitments of the profession of public health consistent with some methods and not others?
• Should the institution of universal health coverage be guided by ethical precepts and if so, what are these values and how should they guide policy?
• Can and should public health's dedication to improving population health conflict with the priorities of some individuals whose choices to not reflect such high priority for health? Should these individual preferences always be respected? Are there effective strategies that pursue population health in the face of such conflicts while preserving the individual's freedom to make unhealthy choices?
• How should responsibility for poor health be assigned, and what are the ethical implications of this assignment for poor health due to health problems due to smoking, obesity, and other unhealthy behavior? To the extent that the socio-economic health gradient reflects differences in how well people take care of themselves are these disparities in health individual failings rather than social injustices?
EVALUATIVE SCIENCE AND STATISTICS

Steve Cicala
Fall; TuTh 1-2:30
4 credits
Economics 2110 and 2115 comprise a two-course sequence for first-year graduate students seeking training in econometric methods at a level that prepares them to conduct professional empirical research. Economics 2110 (fall) reviews probability and statistics, then covers the fundamentals of modern econometrics, with a focus on regression methods for causal inference in observational and experimental data.
Note: This course is designed for PhD candidates in health policy, public policy, education policy, the Business School DBA program. Qualified undergraduates are also permitted to take the course with permission of the instructor.
Prerequisite: Undergraduate courses in probability and statistics, regression analysis, linear algebra, and multivariate calculus.

Joshua Goodman
Spring; TBA
4 credits
Economics 2110 and 2115 comprise a two-course sequence for first-year graduate students seeking training in econometric methods at a level that prepares them to conduct professional empirical research. Economics 2115 (spring) covers topics (different methods) in current empirical research. Faculty members from across the university will teach modules each covering a different method of causal inference, including but not limited to instrumental variables, panel data methods, and regression discontinuity and kink designs. The course will emphasize a mixture of theory and application, with problem sets focused on the replication or extension of recent papers utilizing these methods.
Note: This course is designed for PhD candidates in health policy, public policy, education policy, the Business School DBA program. Qualified undergraduates are also permitted to take the course with permission of the instructor.
Prerequisite: Economics 2110.

Government 2000. Introduction to Quantitative Methods I [FAS]
Xiang Zhou
Fall; Tu 10-12
4 credits
Graduate-level version of Government 1000. Meets with Government 1000, an introduction to statistical research in political science with a focus on applied linear regression. Will require extra homework and examination problems in addition to those for Government 1000.
Prerequisite: Course open to doctoral students only.

Gary King
Spring; M 2-4
4 credits
Graduate-level version of Gov. 1002. Meets with Gov. 1002, introduces theories of inference underlying most statistical methods and how new approaches are developed. Examples include discrete choice, event counts, durations, missing data, ecological inference, time-series cross sectional analysis, compositional data, causal inference, and others. Will require extra homework and examination problems in addition to those for Gov. 1002.
Prerequisite: Government 2000 and for doctoral students only.

Statistics 110. Introduction to Probability [FAS]
Joseph Blitzstein
Fall; TuTh 2:30-4
4 credits
A comprehensive introduction to probability. Basics: sample spaces and events, conditional probability, and Bayes’

Prerequisite: Mathematics 18, 21a, or above (may be taken concurrently).

Statistics 111. Introduction to Statistical Inference [FAS]
Neil Shephard, Susan Murphy
Spring; TuTh 1-2:30
4 credits
Basic concepts of statistical inference from frequentist and Bayesian perspectives. Topics include maximum likelihood methods, confidence and Bayesian interval estimation, hypothesis testing, least squares methods and categorical data analysis.

Prerequisite: Mathematics 19a and 19b or equivalent and Statistics 110.

Statistics 139. Linear Models [FAS]
Kevin Rader
Fall; MW 9:30-11
Spring; TBA
4 credits
An in-depth introduction to statistical methods with linear models and related methods. Topics include group comparisons (t-based methods, non-parametric methods, bootstrapping, analysis of variance), linear regression models and their extensions (ordinary least squares, ridge, LASSO, weighted least squares, multi-level models), model checking and refinement, model selection, cross-validation. The probabilistic basis of all methods will be emphasized.

Prerequisite: Statistics 110 and Math 21a and 21b or equivalent.

Statistics 149. Statistical Sleuthing through Generalized Linear Models [FAS]
Mark Glickman
Spring; MW 8:30-10
4 credits
Sequel to Statistics 139, emphasizing common methods for analyzing continuous non-normal and categorical data. Topics include contingency tables, log-linear models, logistic, Probit and Poisson regression, model selection, model checking, and an introduction to non-parametric methods.

Note: Examples will be drawn from several fields, particularly from biology and social sciences.

Prerequisite: Statistics 139 or with permission of instructor.

Statistics 160. Design and Analysis of Sample Surveys
Alan M. Zaslavsky
Fall; MW 2:30-4
4 credits
Methods for design and analysis of sample surveys. The toolkit of sample design features and their use in optimal design strategies. Sampling weights and variance estimation methods, including resampling methods. Brief overview of nonstatistical aspects of survey methodology such as survey administration and questionnaire design and validation (quantitative and qualitative). Additional topics: calibration estimators, variance estimation for complex surveys and estimators, nonresponse, missing data, hierarchical models, and small-area estimation.

Prerequisite: Statistics 111 or 139 or with permission of instructor.

API 201A,C,D,Z. Quantitative Analysis and Empirical Methods [HKS]
Section A- Steve Cicala, Section C- Dan Levy, Section D- Teddy Svoronos, Section Z- Soroush Saghaian
Fall, TuTh 8:45-10 + F Review
4 credits HKS = 4 credits FAS
Introduces students to concepts and techniques essential to the analysis of public policy issues. Provides an introduction to probability, statistics, and decision analysis emphasizing the ways in which these tools are applied to practical policy questions. Topics include: descriptive statistics; basic probability; conditional probability; Bayes’ rule; decision making under uncertainty; expected utility theory; sampling design; statistical inference; and
hypothesis testing. The course also provides students an opportunity to become proficient in the use of computer software widely used in analyzing quantitative data.

API-201 is required for MPP students and is a prerequisite to API-202. The Z section moves more quickly through the material, spends more time on advanced topics, and assumes a greater mathematical facility than is required for the other sections. The Z section is recommended, but not required, for students who are planning to take API-302. This course may not be taken for credit with API-205 or API-209. MPA students can enroll in API-201 only with the permission of the API-201 course head and if admitted will be assigned to a section by the MPP faculty chair.

API 202A,B,I,Z. Empirical Methods II [HKS]
Section A- Joshua Goodman, Section B- Miguel Santos, Section I- Anders Jensen, Section Z- Gregory Bruich
Fall, MW 10:15-11:30 + F Review,
4 credits HKS = 4 credits FAS
Intended as a continuation of API-201, this course equips students with an understanding of common tools of empirical analysis in policy applications. Much of the learning will take place through hands-on analysis of data sets. The course will cover regression analysis, including multiple regression, dummy variables, and binary dependent variables; as well as program evaluation, including selection effects; the advantages and disadvantages of experimental, quasi-experimental, and observational data; and instrumental variable techniques. The final part of the course includes an integrative exercise in which students will have the opportunity to assess empirical analysis in an open-ended and professionally realistic project.
Prerequisite: API-201 or equivalent.
May not be taken for credit with API-210.

API 209. Advanced Quantitative Methods I: Statistics [HKS]
Dan Levy
Fall; TuTh 10:45-1, Review F 1:15-2:30 or 2:45-4
4 credits HKS = 4 credits FAS
The goal of this course is to prepare students to analyze public policy issues using statistics. Topics included fall in the areas of probability theory, sampling, estimation, hypothesis testing, and regression analysis. While many students taking this class will have already taken courses in statistics and regression analysis, this course will probably place a much stronger emphasis than typical courses on conceptually understanding the statistical methods. Since the course is targeted to first-year students in the MPA/ID program, we will not shy away from using the mathematical tools needed to develop the conceptual understanding. But the emphasis of the course will be on the conceptual understanding and application of the tools rather than on the math or the mechanics behind the tools.
Prerequisites: Multivariate calculus or linear algebra.
This course is open to non-MPA/ID students only by permission of the instructor. May not be taken for credit with API-201.

API 210. Advanced Quantitative Methods II: Econometric Methods [HKS]
Teddy Svoronos
Spring; TuTh 10:15-11:30, Review F 8:45-10 or 10:15-11:30
4 credits HKS = 4 credits FAS
Intended as a continuation of API-209, Advanced Quantitative Methods I, this course focuses on developing the theoretical basis and practical application of the most common tools of empirical analysis including non-linear models, instrumental variables, and panel data. Foundations of analysis will be coupled with hands-on examples and assignments involving the analysis of data sets.
Prerequisite: API-209 or permission of instructor.
This course is open to non-MPA/ID students only by permission of instructor. May not be taken for credit with API-202.

James Kim
Spring; MW 8:30-10, and an optional weekly one-hour section to be arranged
4 credits GSE = 4 credits FAS
Are scores on high stakes tests primarily a function of socioeconomic status? Do mandatory seat belt laws save lives? In this course, students will learn how to use a set of quantitative methods referred to as the general linear model regression, correlation, analysis of variance, and analysis of covariance to address these and other questions
that arise in educational, psychological, and social research. The course strategy will be to learn statistical analysis by doing statistical analysis. During the semester, students will address a variety of substantive research questions by analyzing dozens of data sets and fitting increasingly sophisticated regression models.

**S 040. Introduction to Applied Data Analysis [GSE]**
Joseph McIntyre  
Fall; TuTh 10-11:30 and a 1.5-hour weekly lab section to be arranged  
4 credits GSE = 4 credits FAS

Often when quantitative evidence is being used to answer questions, scholars and decision makers must either analyze empirical data themselves or thoughtfully manage and appraise the analyses of others. This course covers the basic principles of quantitative data analysis and is comparable in content to the full-year S-012/S-030 course sequence. By examining real data gathered to address questions in educational, psychological, and social research settings, students will become acquainted with basic descriptive statistics; tabular and graphical methods for displaying data; the notion of statistical inference; analytic methods for exploring relationships with both categorical and continuous measures; and the foundations of statistical modeling with simple and multiple linear regression, along with analysis of variance (ANOVA) and analysis of covariance (ANCOVA). There will be an emphasis on applying the statistical concepts; in particular, how to (1) select the appropriate statistical techniques; (2) properly execute those techniques; (3) examine the assumptions necessary for the technique to work appropriately; (4) interpret analytic results; and (5) summarize the findings in a cogent manner. Because quantitative skills are best learned through practice, computer-based statistical analyses using Stata will be an integral part of the course. There will be regular take-home assignments as well as a final project involving data analysis and the interpretation and reporting of research results.

**Prerequisites:** Permission of instructor required. Enrollment is limited to 90. No prior data analytic experience required, but a working knowledge of basic algebra is assumed and some previous exposure to introductory statistics is advantageous. First-year Ed.D. students must take either S-040, or S-012 in combination with S-030. Recommended for Ed.M. students wishing to enroll in a Spring course that requires S-030 or S-040 as a prerequisite. Students with prior experience can petition out of the course; petition requests should be directed to the instructor.

**S 052. Applied Data Analysis [GSE]**
Andrew Ho  
Spring; TuTh 10-11:30 and an optional 1.5-hour weekly section to be arranged  
4 credits GSE = 4 credits FAS

This course is designed for those who want to extend their data analytic skills beyond a basic knowledge of multiple regression analysis, and who want to communicate their findings clearly to audiences of researchers, scholars, and policymakers. The course contributes directly to the diverse data analytic toolkit that the well-equipped empirical researcher must possess in order to perform sensible analyses of complex educational, psychological, and social data. Topics in the course include more extensive use of transformations in regression analysis; influence statistics; building and comparing taxonomies of regression models; general linear hypothesis testing; an introduction to multilevel modeling; nonlinear regression analysis; binomial logistic regression analysis; principal components analysis; cluster analysis; an introduction to discrete-time survival analysis; and others. S-052 is an applied course that offers conceptual explanations of statistical techniques, along with opportunities to examine, implement, and practice them in real data. Because the course will feature the intensive use of Stata statistical software in all data analyses, learning the computer skills necessary to conduct these kinds of analyses, and the communication skills to discuss them, is an integral part of the course. Weekly section attendance is strongly encouraged.

**Prerequisite:** Successful completion of S-040 or equivalent course covering applied multiple regression. All cross-registrants and those claiming equivalent knowledge must complete the poll on the course web site before the start of the course and obtain written permission of the instructor.

**NOTE:** There are also many courses offered at HSPH that will satisfy ESS distribution requirement—essentially any courses in the Biostatistics Dept from BST210 up will count, and there are also a few courses in the Global Health and Population Dept that will count—for example GHP 525: Econometrics for Health Policy. For more options on fulfilling the ESS distribution requirement, please see the Biostatistics and Global Health and Population courses listed on the ESS concentration document.
**MANAGEMENT**

The following General Management and Healthcare MBA courses are options for fulfilling a management distribution requirement. Course descriptions are available here: [http://www.hbs.edu/coursecatalog/indexcourse.html](http://www.hbs.edu/coursecatalog/indexcourse.html)

Note that 3 credits is equivalent to 4 credits in FAS.

**General Management**

- HBS 1230. Corporate Strategy (Fall, 3 credits)
- HBS 1503. Building and Sustaining a Successful Enterprise (Spring, 3 credits)
- HBS 1504. Building and Sustaining a Successful Enterprise (Fall, 3 credits)
- HBS 1556. General Management: Processes & Action (Spring, 3 credits)
- HBS 1816. Managing, Organizing & Motivating for Value (3 credits)
- HBS 1908. Business at the Base of the Pyramid (Fall and Spring, 3 credits)
- HBS 2010. Corporate Governance and Board of Directors (Fall, 3 credits)
- HBS 2040. Managing Change and Transformation (Spring, 3 credits)
- HBS 2056. Power and Influence (Fall, 3 credits)
- HBS 2060. Managing Human Capital (Fall, 3 credits)
- HBS 2108. Supply Chain Management (Fall, 1.5 credits)
- HBS 2165. Operating Strategies for Growth (1.5 credits)

**Healthcare**

- HBS 1666. Entrepreneurship in Healthcare IT and Services (1.5 credits)
- HBS 2157. US Healthcare Strategy (Spring, 3 credits)
- HBS 2180. Innovating in Health Care Intensive Course (Spring, 3 credits)
- HBS 6219. Transforming Health Care Delivery (Fall, 3 credits)

The following **Harvard Kennedy School** course will also satisfy a management distribution requirement.

**SUP 578. U.S. Healthcare Industry and Regulatory Policy [HKS]**

Leemore Dafny

Spring; TuTh 8:45-10; Review F 8:45-10

4 credits HKS = 4 credits FAS

The U.S. healthcare sector absorbs 17 percent of GDP, encompassing a diverse set of industries with public, nonprofit, and for-profit buyers and sellers. Regulators have a substantial opportunity and obligation to promote efficiency and competition in these various industries. This course will introduce participants to the key sectors comprising the healthcare industry (including insurers, pharmaceuticals, and acute and non-acute care providers) from the vantage point of the firms operating within them. We will discuss the impact of regulation (including public insurance programs) on business strategies and outcomes, with a strong emphasis on competition policy (i.e., antitrust enforcement). Virtually all examples will be U.S.-based. We will discuss select developments in U.S. healthcare reform over the past 8-9 years, with an emphasis on changes that affect the business of healthcare. Course time will be split between lectures and case discussions. Readings must be completed before class due to the interactive case-teaching method employed.

**Prerequisites:** Prior course in microeconomics. Statistics (through linear regression).
**POLITICAL ANALYSIS**

Robert Blendon  
Spring; MW 4:15-6  
4 credits HKS = 5 credits HSPH = 4 credits FAS  

This course is designed to meet the following objectives: (1) to analyze the politics surrounding major health policy developments in the United States; (2) to examine and to develop possible strategies for influencing political debates and health policy outcomes; and (3) to emphasize the ways political analysis and strategy can improve policy outcomes. Major topics to be covered include analyzing the role of interest groups, media, public opinion, legislative lobbying, elections, coalition building, policy legacies, institutions, and the politics of information as it affects health policy. Case studies focus on the enactment of the Medicare Prescription Drug Bill, The Massachusetts Universal bill, as well as passionate issues such as abortion. Major movements toward comprehensive national health insurance, including the Clinton and Obama health plan, will also be covered. Leaders in political strategy from both the health and political fields will be guest lecturers.

**OTHER REQUIREMENTS**

- All students must take the full-year course, Health Policy 2000A & B (‘Core Course’), in the first year.
- Starting in their third year and continuing until they complete the program, students are required to take the weekly research seminar (Health Policy 3040A&B) given by the PhD Program in Health Policy.