



**HARVARD UNIVERSITY PH.D. PROGRAM IN HEALTH POLICY  
GENERAL REQUIREMENTS\*  
2011 – 2012**

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**  
**MEDICAL SOCIOLOGY**  
**POLITICAL ANALYSIS**

Courses that will definitely 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 one-semester course in that concentration. For instance, if a student takes a half-semester course in ethics at HSPH (e.g., ID 250), he/she must take another half-semester ethics course (e.g., ID 292), to fulfill an ethics “distribution requirement.”

**DECISION SCIENCES**

**RDS 280. Decision Analysis for Health and Medical Practices [HSPH]**

Dr. S. Goldie

Fall 2; Tu,Th 1:30-3:20.

2.5 credits

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. Cost-Effectiveness and Cost-Benefit Analysis for Health Program Evaluation [HSPH]**

Dr. S. Resch

Spring 2; MW 1:30-3:20.

2.5 credits

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.

**[RDS284. Decision Theory] [HSPH]**

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\*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 both on the schools’ web pages and in hard copy for up-to-date information.

Dr. J. Hammitt

Fall; 5 credits, Lectures. Two 2-hour sessions each week.

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.

Note: Not offered in 2011- 2012.

**RDS285. Decision Analysis Methods in Public Health and Medicine [HSPH]**

Dr. J. Kim

Spring 1; MW 1:30-3:20.

2.5 credits

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.

## **ECONOMICS**

### **Economics 1011a. Microeconomic Theory [FAS]**

Catalog Number: 7230

*Edward L. Glaeser*

*Half course (fall term). Tu., Th., 11:30-1. EXAM GROUP: 13, 14*

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.

### **Economics 1460. Economics of Health Care Policy [FAS] / SUP-572 [HKS]**

Catalog Number: 4540

*Joseph P. Newhouse (Kennedy School, Medical School, Public Health)*

*Half course (spring term). M., W., 8:30-10. EXAM GROUP: 1, 2*

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.

*Prerequisite:* Economics 1010a or 1011a. A statistics course is highly desirable.

### **\*Economics 2020a. Microeconomic Theory I [FAS]**

Catalog Number: 0339 Enrollment: Limited to 102.

*Christopher N. Avery (Kennedy School) and Elon Kohlberg (Business School)*

*Half course (fall term). M., W., 8:30-10 and a weekly section to be arranged. EXAM GROUP: 1, 2*

A comprehensive course in economic theory designed for doctoral students in all parts of the University.

Consumption, production, uncertainty, markets, general equilibrium. Applications to policy analysis and business decisions. Emphasizes the use of economic theory in practical research.

*Note:* Offered jointly with the Kennedy School as API-111 and with the Business School as 4010.

*Prerequisite:* Two years of calculus and one course in probability theory. Thorough background in microeconomic theory at the intermediate level. Undergraduates with the appropriate background are welcome.

### **\*Economics 2020b. Microeconomic Theory II [FAS]**

Catalog Number: 4058

*Christopher N. Avery (Kennedy School) and Julian Jamison*

*Half course (spring term). M., W., 8:30-10 and a weekly section to be arranged. EXAM GROUP: 1, 2*

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]**

Fall, 1.0 credit; Four sections\*: A- Maciej Kotowski, B- George Borjas, C- Pinar Dogan, D- Pinar Dogan

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 A section of this course presumes the ability to use basic calculus.

*\*The PhD Program in Health Policy strongly recommends Section A.*

**API-302. Analytic Frameworks for Policy [HKS]**

Richard Zeckhauser

Fall, Tu/Thurs 10:10-11:30 and Review Section on F, 1:10-2:30

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.

*Note:* Also offered by the Economics Department as Econ 1415.

**[GHP 291. Microeconomics and Applications to Public Health in Developing Countries] [HSPH]**

Dr. J. Sevilla

5.0 credits

This is a course in applied microeconomic theory (formerly GHP 271). We use basic calculus, differentiation, and simple constrained maximization theory to develop empirical models of the behavior of individuals, households, firms, and markets, as well as normative theories of social welfare and resource allocation within the health sector. All applications will be drawn from population and public health issues in developing countries. Empirical applications include individuals' demand for health care, health insurance, and retirement saving; the determinants of fertility and educational investments in children; the distribution of resources within households; formal and informal mechanisms for risk sharing; the supply of physician and health services; market failures and inefficiencies due to asymmetric information in health insurance markets; and applications of the theory externalities and public goods to disease control and environmental policy. Normative applications include the trade-off between equity and efficiency, criteria for resource allocation and project evaluation within the health sector such as cost-benefit and cost-effectiveness analysis, and ethical issues such as the valuation of life, the multiple competing objectives of health policy, and fairness.

*Course note:* The course makes use of calculus and constrained maximization at the level of GHP 274 or equivalent.

*Note:* Not offered in 2011- 2012.

**HPM206. Economic Analysis [HSPH]**

Dr. D. Hemenway

Fall; MWF 1:30-3:20

5 credits

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

### **DPI-201. The Responsibilities of Public Action [HKS]**

Fall, 1.0 Credit. Lectures. M, W, 2.40 – 4 PM, Section A- Mathias Risse, Section B- Francis Kamm, Section C- Arthur Applbaum

This course is a philosophical examination of the responsibilities of public policymakers in a democracy. The course asks two questions: (1) What should governments do? (2) What should political actors do? The first question requires consideration of public principles that guide good, just, and legitimate public policy. The second question requires consideration of the many and often competing obligations that should guide political actors inside and outside government, particularly when there is disagreement about what is good, just, and legitimate public policy. Discussions and assignments focus on applications of theoretical concepts from scholarly readings in philosophy and political theory to practical issues of public policy and policymaker responsibility.

### **[96715A. Reproductive Technology and Genetics: Legal and Ethical] [HLS]**

I. Glenn Cohen

Should individuals be able to sell reproductive materials like sperm and ova, or reproductive services like surrogacy? Should the law require individuals diagnosed with diseases like Huntington's diseases to disclose to family members that they too are at risk for the disease? Should prenatal sex selection be a crime? Should federal funds be used for stem cell research? Should law enforcement be able to bank DNA samples collected from suspects and perpetrators? Should doctors be able to patent cell lines developed from their patients' bodies?

Since Watson and Crick's discovery of the double helix structure of DNA in 1953, and the 1978 birth of Louis Brown, the first child conceived through in vitro fertilization, pressing questions like these have propagated. In this course we will cut across doctrinal categories to examine how well the law and medical ethics have kept up, and plot directions for fruitful development.

Topics covered may include:

- prenatal genetic screening and sex selection
- Genetic enhancement
- The sale of sperm and ovum and access to reproductive technology
- Surrogacy
- Cloning
- Preembryo disposition disputes
- Wrongful birth, wrongful conception, and wrongful life torts
- The parentage and anonymity of gamete donors
- Imposition of criminal liability on mothers and third parties for harm to fetuses
- The use of genetic information by insurers and employers
- The collection of genetic information by the state and the criminal justice system
- Biobanking
- Chimeras (human-animal hybrids)
- The stem cell controversy
- The patenting of genes and their derivatives
- Research ethics issues involving fetuses and embryos
- Pharmacogenomics and Race

Note: Not offered in 2011- 2012.

### **GHP 293. Individual and Social Responsibility for Health [HSPH]**

Dr. D. Wikler

Fall 2; MW 8:30-10:20

2.5 credits

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 the Practice of Public Health [HSPH]**

Dr. M. Roberts

Fall 1, MW 8:30-10:20

Dr. D. Wikler

Spring 1, MW 10:30-12:20

2.5 credits

Provides students with a broad overview of some of the main philosophical and moral ideas that are used as a basis for resolving debates of public health policy. Helps students develop their own capacities to analyze, criticize, evaluate, and construct policy-oriented arguments.

The practice of public health require moral reflection and argument for a number of reasons. Public health measures often make demands on the public, such as changes in lifestyles or restrictions of liberties, and these must be justified. Practitioners of public health frequently face ethical dilemmas, both in framing policy and in practice in the field, whose optimal resolution is uncertain. The work of public health practitioners is sometimes challenged on moral grounds, which must be examined and, when appropriate, countered.

The resources for moral argument and justification in public health are found in moral philosophy and philosophical theories of justice; and also in history, the social sciences, and in the science of public health itself. Students in this course will survey some of the principle philosophical approaches in addressing a number of ethical controversies in contemporary public health.

**ID 251. Ethical Basis of the Practice of Public Health: Health Care Delivery [HSPH]**

Dr. M. Mello

Summer 1; M-F 10:30-12:20, or M-F 3:30-5:20

2.5 credits

This course is intended to provide physicians and public health professionals with an understanding of how politics, economic concerns, law, and ethics interact in health policy decisions in the United States. It also explores these issues internationally through a human rights framework. Through discussion of legal cases and articles from the medical and ethics literature, we will explore topics such as informed consent, rights to health, rationing, personal responsibility for health, and fetal abuse.

**ID 292. Justice and Resource Allocation [HSPH]**

Dr. N. Daniels

Spring 2; TuTh 10:30-12:10

2.5 credits

This course explores the ethical issues, especially issues of distributive justice, raised by health and health care resource allocation methodologies and decisions. We begin with examination of distributive issues raised by measures of summary population health and their extensions into cost effectiveness analysis, paying special attention to the strengths and weaknesses of the underlying welfare economic and utilitarian assumptions. Philosophical and empirical efforts to clarify our beliefs about these distributive issues and our commitments to them will also be discussed. We then turn to recent efforts to make health inequalities and inequities a focus of priority in resource allocation, examining both conceptual and moral issues raised by different approaches to such inequalities and by the fact that the distribution of health is so significantly affected by non-health sector factors. We take up two problems of cross-cutting interest, the different concern shown for identified versus statistical victims, and emerging issues about intergenerational equity concerning the elderly and young. Finally, we turn to fair decision process as a way of resolving disputes about allocation. The goal of the course is to equip students with the ethical basis for addressing resource allocation issues in practical public health contexts, and throughout the course there is a focus real cases where controversy surrounds such decisions.

**[ID 513. Ethics and Health Disparities] [HSPH]**

Dr. Norman Daniels

Spring 1; 2.5 credits; Lectures, case studies. Two 2-hour sessions each week.

When is an inequality in health status an injustice or inequity? This course examines various aspects of this issue, bringing appropriate perspectives from ethical theories (utilitarian, libertarian, liberal egalitarian, feminist) to bear on case studies revealing a range of important health disparities. Four main cases will be discussed, each focusing on a central type of health disparity: U.S. racial disparities, class disparities, gender disparities in a developing country setting, and global health inequalities. Key questions to be pursued in each case include: when is an inequality in health between this type of demographic variable unjust? When is a policy that produces, or fails to address, such an inequality race- or gender- or class-biased in a morally objectionable way? What ethical issues are raised by different methods of measuring health inequalities? How does ascription of responsibility for health affect the fairness of health inequalities? What kind of obligations exist to address health inequalities across national boundaries? What ethical issues are raised by policy approaches to addressing health inequalities and giving priority to reducing them?

Note: Not offered in 2011- 2012.

## EVALUATIVE SCIENCE AND STATISTICS

### **Economics 2110. Introductory Probability and Statistics for Economists [FAS]**

Catalog Number: 7213

*Rustam Ibragimov*

*Half course (fall term). M., W., 10–11:30. EXAM GROUP: 3, 4*

Introduction to probability and statistics. Emphasis on general methods applicable to both econometrics and economic theory. Topics include probability spaces, random variables, limit laws, estimation, hypothesis testing, and Bayesian methods.

*Prerequisite:* Statistics (Stat 100), Linear Algebra and Calculus (Math 21a and 21b), and Real Analysis (Math 112).

### **Economics 2120. Introduction to Applied Econometrics [FAS]**

Catalog Number: 2352

*Gary Chamberlain (spring term)*

*Half course (spring term). Tu., Th., 2:30–4. EXAM GROUP: 16, 17*

Introduction to methods employed in applied econometrics, including linear regression, instrumental variables, panel data techniques, generalized method of moments, and maximum likelihood.

*Note:* Enrollment limited to PhD candidates in economics, business economics, health policy, public policy, and political economy and government (PEG). Offered jointly with the Kennedy School as API-217.

*Prerequisite:* Economics 2110 or API-209 or the equivalent.

### **\*Government 2000. Introduction to Quantitative Methods I [FAS]**

Catalog Number: 2281

*Adam Glynn*

*Half course (fall term). Tu., 2–4. EXAM GROUP: 16, 17*

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:* Permission of the instructor for anyone other than Government Department graduate students.

### **Government 2001. Advanced Quantitative Research Methodology [FAS]**

Catalog Number: 8941

*Gary King*

*Half course (spring term). M., 2–4. EXAM GROUP: 7, 8*

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 or the equivalent.

### **Statistics 110. Introduction to Probability [FAS]**

Catalog Number: 0147

*Joseph K. Blitzstein*

*Half course (fall term). M., W., F., at 12, and weekly sections to be arranged. EXAM GROUP: 5*

A comprehensive introduction to probability. Basics: sample spaces and events, conditional probability, and Bayes' Theorem. Univariate distributions: density functions, expectation and variance, Normal, t, Binomial, Negative Binomial, Poisson, Beta, and Gamma distributions. Multivariate distributions: joint and conditional distributions, independence, transformations, and Multivariate Normal. Limit laws: law of large numbers, central limit theorem. Markov chains: transition probabilities, stationary distributions, convergence.

*Note:* This course, when taken for a letter grade, meets the Core area requirement for Quantitative Reasoning.

*Prerequisite:* Mathematics 19a, 20, 21a, or above.

### **Statistics 111. Introduction to Theoretical Statistics [FAS]**

Catalog Number: 1836

*Edoardo Maria Airoidi*

*Half course (spring term). Tu., Th., 1-2:30, and weekly sections to be arranged. EXAM GROUP: 15, 16*

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. Statistical Sleuthing Through Linear Models [FAS]**

Catalog Number: 1450

*Cassandra Wolos Pattanayak*

*Half course (fall term). Tu., Th., 11:30-1, and weekly sections to be arranged. EXAM GROUP: 13, 14*

A serious introduction to statistical inference with linear models and related methods. Topics include t-tools and permutation-based alternatives, multiple-group comparisons, analysis of variance, linear regression, model checking and refinement, and causation versus correlation. Emphasis on thinking statistically, evaluating assumptions, and developing tools for real-life applications.

*Prerequisite:* Statistics 100 or equivalent and Mathematics 19a and 19b or equivalent.

### **Statistics 149. Statistical Sleuthing through Generalized Linear Models [FAS]**

Catalog Number: 6617

*Natesh S. Pillai*

*Half course (spring term). M., W., 1–2:30. EXAM GROUP: 6, 7*

A sequel to Statistics 139, emphasizing common methods for analyzing categorical data. Topics include mixed effects model, contingency tables, log-linear models, logistic, Probit and Poisson regression, model selection, and model checking. 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 [FAS]**

Catalog Number: 2993

*Alan M. Zaslavsky (Medical School)*

*Half course (fall term). M., W., 2:30–5. EXAM GROUP: 7, 8, 9*

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-201. Quantitative Analysis and Empirical Methods [HKS]**

*Fall, Section A - Tu, Th, 8:40 – 10:00, Sections B-D – Tu, Th, 1:10 – 2:30*

*Section A- Kerrie Nelson, Section B- Dan Levy, Section C- Erich Muehlegger, Section D- Kerrie Nelson*

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.

*This course is a prerequisite to API-202. The A 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 A 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.*

### **API-202. Empirical Methods II [HKS]**

*Spring, Lectures: TBD*

*Section A- Jose Carlos Rodriguez-Pueblita, Section B- David Yanagizawa-Drott, Section C- Joshua Goodman, Section D- Rema Hanna*

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.

*The A section moves more quickly through this material, spending time on more advanced applications. The A section also assumes a greater mathematical facility than is required for the other sections. May not be taken for credit with API-210.*

### **API-209. Advanced Quantitative Methods I: Statistics [HKS]**

*Fall, Tu, Th, 10:10 – 11:30*

*Dan Levy*

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]**

*Spring, Lectures: TBD*

*Alberto Abadie*

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.*

### **S-030. Intermediate Statistics: Applied Regression and Data Analysis [GSE]**

*Spring, Tu, Th, 10:00 - 11:30*

*Andrew Ho*

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. Using dozens of real data sets as catalysts, we will discuss how to (1) formulate interesting research questions; (2) select appropriate statistical techniques; (3) conduct necessary calculations; (4) examine assumptions necessary for the technique to work appropriately; (5) interpret analytic results; (6) identify rival explanations of the results; and (7) summarize the findings in a cogent and convincing argument. Because quantitative skills are learned best through practice, computer-based statistical analyses will be an integral part of the course.

*Note:* First-year Ed.D. students must either take S-012 in combination with S-030 or take S-040.

### **S-040. Introduction to Applied Data Analysis [GSE]**

*Fall, Tu, Th 8:00 – 10:00 and a two-hour weekly lab section to be arranged.*

*Katherine E. Masyn*

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 will cover 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 several take-home assignments as well as a final project involving data analysis and the interpretation and reporting of research results.

*Prerequisite:* No prior statistics course work required, but a working knowledge of basic algebra is assumed. First-year Ed.D. students must either take S-040 or take S-012 in combination with S-030. Required for Ed.M. students in the International Education Policy Program who have not completed an introductory statistics course.

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]**

*Spring, Tu, Th, 10:00 - 11:30*

*John B. Willett*

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, 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.

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

## MANAGEMENT

### **1504. Building and Sustaining a Successful Enterprise [HBS]**

*Professor Clayton M. Christensen*

*Adjunct Professor Raymond V. Gilmartin*

*Senior Lecturer Chet Huber*

Fall; Q1; Q2; 3 credits

28 sessions

Paper

*Senior Lecturer Chet Huber*

Winter, Q3,Q4, 3 credits

#### Career Focus

In this course we will study the challenges of building and managing an enduring, successful company or renewing the vitality of an existing organization, from the point of view of the general manager. This course will prove valuable to future general managers, as well as those who will consult for or invest in operating companies.

#### Educational Objectives

The focus of this course is to learn how to use well-researched theories about strategy, innovation and management to understand why things happen the way they do in businesses, and to understand what management tools, strategies and methods will and will not be effective, in the different circumstances in which our students find themselves.

#### Course Content and Objectives

In the early sessions of the course, we will introduce models about the key jobs of the general manager, who must integrate the marketing, product development, operations, strategic planning, financial, and human dimensions of the enterprise. We will employ these models throughout the course to understand the root cause of the challenges the general managers in our cases are facing, and to develop action plans for resolving them. During the case discussions, we will seek to answer some of the following questions; which are relevant to start-up companies as well as large, established ones.

How can I beat powerful competitors?

How can I create products that better connect with customers?

How integrated should our company be?

How should we set strategy?

From whom should we get funding for new growth initiatives?

How should we structure our organization?

How can we build and exploit a valuable brand?

How can we create and sustain a motivated group of employees?

Who should we hire or promote to manage this effort?

The paper for the course will not require field or library research. Rather, it will require students to apply the theories that we learn in the course to understand and resolve a complex problem or opportunity that they have seen in a company that they know. As compared to a typical course paper, you might think of this as an extended, take-home final exam, where the student selects the "case" and the exam question, and can work with one or two other students in the analysis and write-up.

## **2166. Operations Strategy: Managing Strategy [HBS]**

*Professor Gary P. Pisano*

Winter; Q3; Q4; 3 credits

20 Sessions

Paper

### *Career Focus*

This course is focused on understanding and overcoming the operational challenges of nurturing and managing enterprise growth. The course integrates concepts from the fields of operations, corporate strategy, finance, and organizational design. It is suitable for students with a wide range of career goals, including entrepreneurship and venture capital, general management in larger enterprises, and consulting.

### *Educational Objectives*

Effectively designed operations can be a powerful source of growth. Consider companies like IKEA, Federal Express, Amazon, and Virgin. These companies achieved extraordinary growth through the innovative design of their operations. In this course, you will gain an understanding of how the configuration of a company's operations can shape its growth potential and will learn principles for designing operating strategies that drive profitable growth.

### *Course Content*

The course focuses on how the design of an organization's operating strategy can either impede or enhance growth. We will explore growth challenges facing organizations across the size spectrum--from young start-ups to global conglomerates--and across a broad range of industries, including biotechnology, health care, fashion, automobiles, retail, airlines, web services, clean energy, and electronics. Conceptually, the course is rooted in the idea that organizational growth is a process. For a company to grow profitably, that process must be understood and strategically managed. The course makes extensive use of readings that provide foundational theories and concepts. These readings are used in combination with traditional case studies. The course explores the following issues:

Why is profitable growth so difficult to achieve and sustain over long periods of time?

How does the configuration of operations either impede or enhance growth prospects? How can you align your operations strategy with your growth strategy?

What are the different kinds of growth strategies and what are the critical operating capabilities needed to execute those?

How can you manage operational diversification?

How should you evolve your operations to adapt to industry dynamics such as new competitors, technological changes, and market disruptions?

### *Course Requirements*

You will be required to write an HBS style case study on an organization of your choice facing a growth challenge, along with an accompanying analytical note illustrating how theories and principles discussed in the course can be applied to your case.

## **2180. Innovating in Health Care [HBS]**

*Professor Regina Herzlinger*

Fall; Q1; 3 credits

14 sessions; 2 class sessions daily

### *Course Requirements*

Students are required to prepare a business plan, which employs the framework of this course, to explore an entrepreneurial opportunity in health care, and to evaluate their classmates' plans.

### *Career Focus*

For students interested in careers in entrepreneurial health care management, consulting, and investing.

Educational Objectives

Innovating in Health Care (IHC) helps students to create successful entrepreneurial health care ventures by enabling

them to:

- Identify the alignment between an entrepreneurial health care venture and the Six Forces that shape health care - structure, financing, technology, consumers, accountability, and public policy.
- Create a business model that responds appropriately to any misalignments. Innovating in Health Care embraces every part of the health care sector, including insurance, services, IT, medical devices, biotechnology, diagnostics, and pharmaceuticals. The course has a global focus with case studies set in Brazil, India, Spain, the U.K., and the U.S., among other countries.

### Content and Organization

The course is organized into four modules (see syllabus):

- In the first, Innovating in Health Care introduces students, through case studies, to the analytic framework of the Six Forces that critically shape new health care ventures and their impact on business models for three different kinds of health care innovations: consumer-focused, technology-driven, and consolidations.
- The next module uses case studies to discuss each of the Six Forces in detail.
- The third module discusses case studies of firms that succeeded or floundered in response to their alignment with the Six Forces, typically with the case protagonists present.
- In the last module, selected students present their business plans to the class.

As an example of the discussion of the Six Forces, one section focuses on how the financing force affects new ventures, i.e., how do innovators get paid? The answer differs from that in most other sectors of the economy because the health care industry in virtually all developed countries is typically financed by a third party, not its users. In the U.S., employers are the primary sources of payment through private health insurance companies. State and federal governments pay for most of the health care expenses for their employees, the elderly and the poor. The health care expenses in other developed countries are typically paid by governments.

The "Note on Financing" explains the overall financing of health care in the U.S. and other countries, the interest of consumers in these financing mechanisms, the different kinds of insurance plans used by employers and government, and the accountability and public policy issues they raise. It is accompanied by case studies of four health insurance firms—one is an integrator (WellPoint). The other three describe entrepreneurial firms which newly offered HMOs (THG), high-deductible insurance (Consumer-Driven Health Care: Medtronic), and vertically integrated health care in Brazil (Amil). The "Note on Health Insurance Coverage, Coding, and Payment" explains how these processes operate for various types of medical technology products and related service providers. Cases about an innovative medical technology company (ABC) and a health service integrator (MedCath) enable students to apply these principles.

### Business Plan Requirements

Students must prepare a business plan, which employs the IHC Framework to explore an entrepreneurial opportunity in health care. Some ideas for projects are posted on the course platform but you can devise your own project, as well, after Prof. Herzlinger approves it. Please let Prof. Herzlinger know if you would like to pursue any of the course platform projects for your business plan.

You will prepare a 5 minute presentation of your business plan idea for health care, its alignment with the Six Forces, and the resulting business model. I will randomly select 6 or more people to make this presentation in class. Those selected will need to email your presentation materials to my faculty assistant the Monday before your presentation. Presentations will be on October 13th.

Your business plan should cover the following topics:

- The type of opportunity
- Six Forces alignment
- Next steps

### Grading

Students are expected to attend every class unless excused in advance in writing. Class participation will account for a significant percentage of the grade, and the business plan will account for the remainder.

### Appointments/Correspondences

Meetings with Prof. Herzlinger can be made through her faculty assistant. Appointments are made on a first come, first serve basis. All appointments will require a resume and an agenda two business days prior to the meeting. Be sure to cc the faculty assistant on all class emails.

### **[2190. Managing Medicine] [HBS]**

*Senior Lecturer Richard Bohmer*

### Career Focus

The U.S. healthcare market is currently undergoing widespread change. New technologies and healthcare delivery models, coupled with increasing consumer empowerment will ultimately revolutionize healthcare delivery. However, for entrepreneurs and healthcare managers alike, this is a particularly challenging market because of its complexity, fragmented structure and large number of constituencies. In order for managers to improve the quality and efficiency of healthcare delivery, or successfully launch new services or products, they must understand the design and management of healthcare operations. Many healthcare innovations ultimately fail because they neither integrate with existing clinical processes, nor successfully create new ones. The course will examine the unique characteristics of the care delivery process in order to help students identify opportunities for innovation and develop the management skills needed to design and implement operational and technologic change in healthcare.

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The course is aimed primarily at those students who are contemplating a career in the healthcare industry. It will be equally valuable for students planning a career with organizations that supply innovations to the delivery sector, such as device and pharmaceutical companies, and those interested in managing healthcare delivery. Those planning to work for organizations that serve these two constituencies, such as consultants and healthcare venture capitalists will also be helped by the course. Because we focus on innovation and change, the course will help healthcare entrepreneurs understand how to execute their ideas. Although the course uses material primarily drawn from the U.S. healthcare sector, it addresses issues relevant to all healthcare systems.

### Educational Objectives

The course aims to give students an understanding of the complex interaction between science, medicine, healthcare delivery and the practice of management. It will discuss the way this interaction influences the choice of appropriate system design, and improvement, and marketing strategies. It will enable students to take leadership positions in healthcare organizations and new ventures. The course is designed to expose students to some of the new management research in the healthcare field and will build upon the ongoing research of HBS faculty. It is intended to complement other healthcare courses by looking closely at healthcare delivery to understand how new innovations are adopted by patients and healthcare professionals.

### Course Content and Organization

The course will cover several major areas: the fundamental nature of the health care process, the design, management and improvement of health care processes, evaluation of new health care delivery models, and, evaluation of strategies promoting technology adoption in health care. As part of the course requirement students will be asked to complete a paper describing an important issue or dilemma faced by a healthcare manager or entrepreneur and the appropriate response.

Note: Not offered in 2011-2012

## **[2230. Managing Global Health: Design, Delivery and Evaluation of Global Health Programs] [HBS]**

*Associate Professor Nava Ashraf*

This course is designed for students who seek entrepreneurial or management roles in global development and/or health. The course draws from behavioral economics and delivery science to teach how to design programs for behavior change; implement effective delivery; and do rigorous impact evaluation. It is appropriate for those with interests in development and in social services delivery, as well as those with interests in health.

Managing Global Health (MGH) trains and enables prospective managers and entrepreneurs to meet three of the largest challenges in global development:

1. How do we promote behavior change? Appropriate design of products, services and programs;
2. How do we make sure products and services get to those in need? Effective delivery, including the use of market mechanisms such as prices and incentives;and
3. How do we know that we've made a difference? Rigorous impact evaluation, with particular attention to randomized controlled trials in the field.
- 4.

Through exposure to major practitioner challenges, with guest speakers from the field, guest faculty from across the University, and engagement with cutting edge research in public health and economics, students will learn to bridge the worlds of research and action to creatively and skillfully make an impact in global health.

### *Content and Organization*

MGH begins with an overview of the major managerial challenges in global health, and an introduction to the dynamics of the course, which involve engaging across disciplines and with research and researchers to create evidence-based change. There will be a heavy emphasis on applications in global health. However, the concepts will be applicable to other service and product delivery in the social enterprise sector in poor markets. Materials and cases are largely, but not exclusively, focused on global health.

The course consists of the following three Modules, each asking pressing questions in the field and drawing on cutting edge research to help us answer them:

**I. Design:** Why do households facing cholera and diarrheal diseases not purify their water? Why do commercial sex workers leave condoms in their pockets instead of using them? How do we promote use, not just possession, of health products and services? The answer lies in the design of products and services.

**II. Delivery:** What is the best way to deliver new products or services? To what extent can we draw on private distribution channels or private sector models of prices and incentives? This Module discusses the role of intermediaries and scale up in delivery channels, as well as the role of prices for health products and incentives for delivery agents.

**III. Evaluation:** Is it working? Good design and effective delivery relies on feedback about a program's effectiveness. But in the absence of market forces (and sometimes even in their presence) demonstrating impact is difficult. Many programs fail to do so entirely. But rigorous evaluation is not only a prerequisite for continued funding: it is essential to meeting managerial challenges and maximizing impact.

Note: Not offered in 2011-2012

## **4420. Behavioral Approaches to Decision Making and Negotiation [HBS]**

*Francesca Gino, Amy Cuddy, and Maarten Bos*

Fall, M 3:00-6:00

This course will provide an overview of the field of behavioral decision making. A focus of the course will be the individual as a less than perfect decision maker in individual and competitive contexts. On the decision making side, we will start with March and Simon's (1958) work on bounded rationality, work through the groundbreaking research of Kahneman and Tversky, and update this line of inquiry through the current decade. We will examine the implications of imperfect behavior for theoretical development, as well as for how to train individuals to make wiser decisions.

This course will involve students in an intensive, thorough survey of the intersection of analytic and behavioral perspectives to decision making and negotiation. Each class we will cover an area in depth, explicate some major

perspectives in the field, review a select set of readings, and discuss some of the critical issues that have been raised with regard to theory and experimentation.

## MEDICAL SOCIOLOGY

### **[\*Psychology 2630. Social Behavior in Organizations: Seminar] [FAS]**

Catalog Number: 0991

*J. Richard Hackman*

*Half course (fall term). Hours to be arranged.*

Topics include how groups and organizations affect individual members and vice versa; interpersonal and group processes; work team effectiveness; power, political, and intergroup dynamics; group and organizational leadership. *Note:* Expected to be given in 2013–14. Limited to doctoral students. Students are expected to attend the lectures of Psychology 1501.

*Note:* Not offered in 2011-2012.

### **\*Sociology 224. Organizational Analysis: Seminar [FAS]**

Catalog Number: 8202

*Christopher Marquis (Business School)*

*Half course (spring term). Tu., Th., 1–3:30. EXAM GROUP: 15, 16, 17*

Reviews classical and contemporary theories of organizations, including ecological, institutional, resource dependence, transaction-cost, agency theory, networks and social movements. Examines phenomena at multiple levels from the establishment to the organizational network or field.

*Note:* Offered jointly with the Business School as HBS 4880. This course will meet until spring break.

### **15.311. Organizational Processes [MIT Sloan School of Management]**

*R. Fernandez, D. Loyd, R. Reagans*

*Fall term*

Enhances students' ability to take effective action in complex organizational settings by providing the analytic tools needed to analyze, manage, and lead the organizations of the future. Emphasizes the importance of the organizational context in influencing which individual styles and skills are effective. Employs a wide variety of learning tools, from experiential learning to the more conventional discussion of written cases. Centers on three complementary perspectives on organizations: the strategic design, political, and cultural "lenses" on organizations. Major team project to analyze an actual organizational change, with oral and written reports. Restricted to first-year Sloan master's students.

### **[15.341. Individuals, Groups, and Organizations] [MIT Sloan School of Management]**

*J. Curhan*

Develops basic concepts for understanding individual, group, and organizational behavior through critical analysis of important works in the field. Areas covered: individual affect and cognition; group process and performance; and organizational culture and adaptation. Emphasizes use of behavioral science concepts for stimulating new and useful organizational behavior research. Primarily for doctoral candidates in the Sloan School of Management.

*Note:* Not offered in 2011-2012.

### **15.342. Organizations and Environments [MIT Sloan School of Management]**

*R. Reagans*

*Fall term, Th 9:00 – 12:00*

Provides an introduction to research in "organizations and environments," an interdisciplinary domain of inquiry drawing primarily from sociology, and secondarily from economics, psychology, and political science. Seeks to understand organizational processes and outcomes in the surrounding economic, cultural, and institutional context in which they are situated. Also provides an introduction to the main groups that together form the Behavioral Policy Sciences (BPS) area of MIT/Sloan, including economic sociology, organization studies, work and employment, strategic management, global management, and technology, innovation, and entrepreneurship. Consists of four modules taught by faculty from each of the four BPS groups, as well as integrative sessions taught by the main instructor. Preference to first-year doctoral students in BPS.

### **Also:**

Non-economics courses listed on pages 4-5 of the Medical Sociology Requirements Document:

[http://www.healthpolicy.fas.harvard.edu/concentration\\_pdfs/MedicalSociology.pdf](http://www.healthpolicy.fas.harvard.edu/concentration_pdfs/MedicalSociology.pdf)

## **POLITICAL ANALYSIS**

### **SUP-575 [HKS] / HPM 247 [HSPH]. Political Analysis and Strategy for U.S. Health Policy**

*Robert Blendon*

*Spring term. TBD*

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 Medical 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 health plan, will also be covered. Leaders in political strategy from both the health and political fields will be guest lecturers.

*Note:* This course is offered each spring, and it alternates being listed at HKS and HSPH.

## **OTHER REQUIREMENTS**

- All students must take the full-year course, Health Policy 2000 ('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 3040hf) given by the PhD Program in Health Policy.
- Epidemiology 500 at HSPH.