

The Blue Book

A Course Guide for the
Secondary Field in
Global Health and Health Policy

2019–2020

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What Can You Expect from Global Health and Health Policy?

Interdisciplinary Approach

Explore interdisciplinary world health challenges from many perspectives; use different disciplinary approaches to learn about health care delivery, health systems, public health and health policy. Courses in the GHHP Secondary Field sit within three schools and 27 FAS departments. These courses represent an array of perspectives on global health topics and can inform your course of study both in and out of the classroom.

Local and Global Perspective

Learn how health is influenced by social, economic, political, cultural, and environmental factors, both locally and globally. Your GHHP Secondary Field could include any of the above topics or move into themes such as: global governance for health; the relevance and morality of socioeconomic inequality in health; consequences of politics and the role of health in foreign policy, national security, and economic development.

Explore the Connections

Learn about the rising global burden of chronic diseases in high-, low-, and middle-resource countries; the emergence of pandemic diseases and their economic and psychological impact; health consequences of travel, urbanization and migration, wars and ethnic conflict; changes in climate and other environmental factors, including water and food security.

Experiential Learning

Studying global health and health policy requires integrative experiential learning to connect the knowledge and skills learned in the classroom to real-world complexities. You can take advantage of more than 50 summer internships, both domestic and abroad, and continue your work as part of your research requirement. More information about summer opportunities and funding can be found at <https://ghhp.fas.harvard.edu/summer-opportunities>.

Faculty Mentorship

Learn from faculty members teaching global health courses from across the university and receive one-on-one mentorship on independent research. Participate in Harvard Global Health Institute workshops and student roundtables. Work with faculty on research in their field or get valuable advice on projects of your own creation.

This Booklet

The courses listed in this booklet fulfill requirements of the Secondary Field in Global Health and Health Policy (GHHP). The booklet includes courses that are listed in the 2018-19 online course catalogs from several Harvard schools. Since the terms and times in which courses are offered can change from time to time, students should consult the online catalogs available from the different Harvard schools for the most accurate, up-to-date information. Note that courses that were offered previously and still count for GHHP credit do not appear in this booklet, but a listing of them can be found on our website at <http://ghhp.fas.harvard.edu/courses-0>.

Petitioning Courses for GHHP Credit

Students may petition to have courses not listed in the Blue Book count for GHHP Secondary Field credit. A course will not be approved unless it has substantial global health or health policy content. To petition a course, email your request to ghhp@fas.harvard.edu, attach a syllabus, and explain which category within the GHHP Secondary Field you believe the course satisfies. Note that the only HSPH courses listed in the Blue Book are those that have been petitioned previously. It is likely that the majority of courses offered at HSPH, once petitioned and reviewed, would count for GHHP; however, be aware that many courses offered at HSPH are half-semester courses and provide only half the credit of a semester-long course in FAS.

Cross-Registration

Students must cross-register in order to take classes in Harvard schools outside of FAS. Policies and deadlines for cross-registration generally vary from school to school. Note that grades received in cross-registered courses will not be used in computing a student's GPA unless petitioned to count towards concentration or secondary field requirements. Students wishing to cross-register should consult the discussion of cross-registration in the FAS *Handbook for Students* at this webpage: <https://handbook.fas.harvard.edu/book/cross-registration>.

Prerequisites and Instructor Permission

The courses listed in this booklet are suggestions for undergraduates who are interested in learning more about global health and health policy or the application of other disciplines to global health/health policy issues. *It is the responsibility of students to ensure that they have the correct prerequisites and the permission of the instructor, when required, before they enroll in a course.*

Questions or Comments?

Do you have any comments about this booklet? Do you know of a course that is not listed here and should be? Would you like to receive a copy of this booklet in future years and/or an extra copy of this year's booklet? Please contact us at ghhp@fas.harvard.edu.

Harvard Secondary Field in Global Health and Health Policy Requirements

In total, five courses (20 credits) are required:

One Foundational Course:

- GENED 1063: World Health: Challenges and Opportunities [Formerly "Societies of the World 24: Is Globalization Good or Bad for World Health?"]
- GENED 1079: Why is There No Cure for Health? [Formerly "Empirical and Mathematical Reasoning 20"]
- GENED 1093: Who Lives, Who Dies, Who Cares? Reimagining Global Health [Formerly "Societies of the World 25: Case Studies in Global Health: Biosocial Perspectives"]
- *Not Offered in 2019-2020:* GENED: USW 11 American Health Care Policy

One Research Course:

- One term of the senior thesis tutorial, when the thesis pertains to global health or health policy
- One term of the senior thesis tutorial, when students write an additional thesis chapter on the global health or health policy implications of their hard science, engineering, or computer science thesis
- Global Health and Health Policy 99: Research in Global Health and Health Policy
- Supervised Reading and Research course (GHHP 91 or equivalent course in another department), culminating in a research paper pertaining to global health or health policy

Additional guidelines regarding the research requirement are available at <http://ghhp.fas.harvard.edu>

Three Additional Courses, one course in three of the following eight categories:

Health Policy

- Economics of Health
- Ethics of Health
- Health and Demography
- Health, Culture, and Society
- History and Practice of Medicine
- Politics of Health

Science of Disease

- Engineering Sciences and Statistics
- Science of Disease

Course options for the eight categories are listed in this Blue Book. Note that the eight categories are divided into two areas, Health Policy and Science of Disease. Students are strongly encouraged to take at least one course from both areas.

Other Information:

- Only one of the five courses may be non-letter-graded. (Exception: Two courses may be taken non-letter-graded if one is the senior thesis tutorial used to satisfy the research requirement.)
- Only one course may double count for a secondary field and concentration.
- A maximum of two non-FAS courses may count for the GHHP Secondary Field. This includes courses taken at other Harvard schools, including Harvard Summer School, and courses taken in study abroad programs.

Course Listings by GHHP Category

FOUNDATIONAL COURSES

GENED 1063: World Health: Challenges and Opportunities

Sue J. Goldie

Spring; MW 10:30-11:45

Three extraordinary changes in the world present both risks and opportunities to health—unprecedented interconnections across borders, rapidly shifting population dynamics, and changing epidemiological patterns. This course will challenge your assumptions about the world’s populations and broaden your perspectives about how health relates to sustainable development.

Using case examples of contemporary health challenges, we will explore the influence of social, political, and environmental determinants on health, paying particular attention to transnational risks. We will consider solutions from a variety of perspectives, contributions from within and outside the health sector, and interventions at the local, national and global levels. You will be exposed to a variety of methods, from demography to decision science, and will build fundamental skills in data interpretation and graphical literacy. By the end of the course, you will be equipped to thoughtfully analyze and contextualize 21st century global challenges, and to formulate your own opinion about the question – is globalization good or bad for global health?

GENED 1079: Why is There No Cure for Health?

David Cutler

Fall; MWF 12-1:15

Around the world, billions of dollars are spent on health care treatments, public health initiatives, and pharmaceutical research and development. So why are we still not able to prevent preventable diseases, provide affordable healthcare for millions of people, and deliver cures for curable diseases? And what are the best ways to address these issues?

Because these questions are so large, we will focus our discussion around questions like: What steps should be taken to end HIV/AIDS? How should the United States reform its health care system? And how should prescription drugs be produced and sold?

We will explore how social scientists address empirical questions, the types of data that are available, how those data are analyzed, and the confidence with which causal statements are made. By the end of the course, you will be able to dissect a large question—such as how to reform American healthcare—into its technological, social, economic, and moral components, and weigh potential solutions according to these guiding vectors.

GENED 1093: Who Lives, Who Dies, Who Cares? Reimagining Global Health

Arthur Kleinman, Paul Farmer, Anne Becker, Salmaan Keshavjee

Fall; TTh 10:30-11:45

If you are sick or hurt, whether you live or die depends not only on biological factors, but social ones: who you are and where you are, what sort of healthcare system is available to help you survive, and what kind of care is available to help you recover, if society believes you deserve it. Most medical research narrowly focuses on the biological basis of disease, but this course takes a novel biosocial approach to reveal how governments, institutions, and histories shape health and well-being, how poverty and racism get into someone’s lymph nodes, how cost-saving measures manifest as tuberculosis in someone’s lungs. In doing so, the course challenges the conventional assumptions within the field of global health—examining how interventions influence what happens after a catastrophe in unexpected ways, how the persistence of health inequalities over centuries can be explained, how the structures of powerful institutions influence the policies they develop, how the poor deserve not only health care but high quality health care, and how caregiving and global health are urgent moral practices.

RESEARCH COURSES

Global Health and Health Policy 91: Supervised Reading and Research

David Cutler

Fall and Spring

Consent Required: Instructor

Supervised reading leading to a long term paper on a topic or topics not covered by regular courses of instruction.

Course Notes: May not be taken Pass/Fail. To enroll in the course, a written proposal and signature of advisor and chair of GHHP Committee is required. Refer to GHHP website for enrollment requirements and instructions:

<https://ghhp.fas.harvard.edu/ghhp-91>

Global Health and Health Policy 99: Research in Global Health and Health Policy

David Cutler

Spring; W 3-5

Spring; Th 12:45-2:45

Consent Required: Instructor

Global health and health policy are interdisciplinary fields that apply the theories and methods of statistics, sociology, political science, economics, management, decision science, and philosophy to the study of population health and health care. Research from these fields influences policymaking in a variety of settings. For example, the Patient Protection and Affordable Care Act (ACA) drew upon health policy research to develop programs for improving access and quality of care in the United States. Similarly, global health research guides international institutions, such as the World Health Organization, in determining health guidelines for all countries. Global health and health policy research can also inform practices inside hospitals, initiate programs for diseases like HIV, and regulate the food and drug industries. This course introduces the fundamentals of research design and methods in global health and health policy and assists students in developing research projects and crafting policy recommendations that can impact health care systems and public health.

Course Notes: This course fulfills the research requirement of the Secondary Field in Global Health and Health Policy and enrollment is ordinarily limited to seniors in the GHHP Secondary Field. Underclass GHHP students may petition to take the course if all other Secondary Field requirements have been met. Course is primarily taught by graduate students in the PhD in Health Policy program and guest lecturers. May not be taken pass/fail.

ECONOMICS OF HEALTH

GENED 1079: Why is There No Cure for Health?

David Cutler

Fall; MWF 12-1:15

Around the world, billions of dollars are spent on health care treatments, public health initiatives, and pharmaceutical research and development. So why are we still not able to prevent preventable diseases, provide affordable healthcare for millions of people, and deliver cures for curable diseases? And what are the best ways to address these issues?

Because these questions are so large, we will focus our discussion around questions like: What steps should be taken to end HIV/AIDS? How should the United States reform its health care system? And how should prescription drugs be produced and sold?

We will explore how social scientists address empirical questions, the types of data that are available, how those data are analyzed, and the confidence with which causal statements are made. By the end of the course, you will be able to dissect a large question—such as how to reform American healthcare—into its technological, social, economic, and moral components, and weigh potential solutions according to these guiding vectors.

Biological Chemistry and Molecular Pharmacology 230: Principles and Practice of Drug Development

Stan Finkelstein

Fall; TBA

Critical assessment of the major issues and stages of developing a pharmaceutical or biopharmaceutical. Drug discovery, preclinical development, clinical investigation, manufacturing and regulatory issues considered for small and large molecules. Economic considerations of the drug development process.

Course Notes: Classes will be held in MIT classroom 1-190 from September 4, 2019, through December 11, 2019.

Economics 980w: Policy Options in Health Economics

Ariel Pakes

Spring; T 12-2:45

Consent Required: Instructor

Description: The seminar will focus on policy issues in health economics. We will read papers on an assortment of policy options and formulate frameworks for analyzing their likely impacts on outcomes of interest. Examples include the analysis of mergers in hospital and insurance markets, the choice of capitation vs fee for service contracts and its impact on cost and quality of care, policy options for health insurance, and the re-structuring of health service providers. Where possible we will use data and do the analysis

quantitatively. Some knowledge of microeconomic and statistical tools, particularly those related to industrial organization, will be helpful (a few of the needed techniques will be taught during the course). This is a Junior Tutorial.

Course Notes: This course requires special action-application or lottery- to enroll. Visit

economics.harvard.edu/page/junior-seminar-0 and the course canvas site for more information.

Recommended Prep: Ec 1010a and 1010b (or 1011a and 1011b), one of stats 100, 104 or 110, and Ec 1123 or 1126 (or concurrent enrollment in 1123 or 1126).

Economics 1460: Economics of Health Care Policy

Joseph P. Newhouse

Fall; MW 8:45-10

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.

Course Notes: 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 and Harvard Chan School as HPM 227

Recommended Prep: Economics 1010a or 1011a. A statistics course is highly desirable.

ENGINEERING SCIENCES AND STATISTICS

Applied Mathematics 101: Statistical Inference for Scientists and Engineers

Robert D. Howe

Fall; MW 10:30-11:45

Class Capacity: 55

Consent Required: Instructor

Introductory statistical methods for students in the applied sciences and engineering. Random variables and probability distributions; the concept of random sampling, including random samples, statistics, and sampling distributions; the Central Limit Theorem and its role in statistical inference; parameter estimation, including point estimation and maximum likelihood methods; confidence intervals; hypothesis testing; simple linear regression; and multiple linear regression. Introduction to more advanced techniques as time permits.

Recommended Prep: Math 21a or Applied Math 21a or equivalent.

Biomedical Engineering 110: Physiological Systems Analysis

Maurice Smith

Fall; MW 1:30-2:45

A survey of systems theory with applications from bioengineering and physiology. Analysis: differential equations, linear and nonlinear systems, stability, the complementary nature of time and frequency domain methods, feedback, and biological oscillations. Applications: nerve function, muscle dynamics, cardiovascular regulation. Laboratory: neural models, feedback control systems, properties of muscle, cardiovascular function.

Recommended Prep: Applied Mathematics 21b or Mathematics 21b or equivalent. Physiology at the level of Engineering Sciences 53 suggested.

Biomedical Engineering 125: Tissue Engineering

David Mooney

Spring; TTh 1:30-2:45

Fundamental engineering and biological principles underlying field of tissue engineering, along with examples and strategies to engineer specific tissues for clinical use. Students will prepare a paper in the field of tissue engineering, and participate in a weekly laboratory in which they will learn and use methods to fabricate materials and perform 3-D cell culture.

Recommended Prep: Biochemistry or cell biology background.

Economics 1123: Introduction to Econometrics

James Stock (Fall), Gregory Bruich (Spring)

Fall; MW 9-10:15

Spring; TTh 3-4:15

An introduction to multiple regression techniques with focus on economic applications. Discusses extensions to discrete response, panel data, and time series models, as well as issues such as omitted variables, missing data, sample selection, randomized and quasi-experiments, and instrumental variables. Also develops the ability to apply econometric and statistical methods using computer packages.

Course Notes: Students may take both Economics 1123 and Statistics 139 for credit. However, Statistics 139 will not count as the econometrics requirement for the economics concentration. Also, Economics 1123 may not be taken for credit if taken after Economics 1126, but credit will be given for both courses if Economics 1123 is taken first.

Recommended Prep: Statistics 100 and 104.

Economics 1126: Quantitative Methods in Economics

Ellie Tamer

Fall; TTh 10:30-11:45

Topics include conditional expectations and its linear approximation; best linear predictors; omitted variable bias; panel data methods and the role of unobserved heterogeneity; instrumental variables and the role of randomization; various approaches to inference on causal relations.

Course Notes: Economics 1123 may not be taken for credit if taken after Economics 1126, but credit will be given for both courses if Economics 1123 is taken first. Students who fulfill the econometrics requirement with Economics 1126 and who intend to pursue Honors should note that the Honors exam assumes knowledge of the material covered in Economics 1123.

Recommended Prep: Math 18, 21a, Applied Math 21a.

Engineering Sciences 6: Introduction to Environmental Science and Engineering

Elsie Sunderland, Steven Wofsy

Spring; TTh 10:30-11:45

This course will provide students with an introduction to current topics in environmental science and engineering by providing: an overview of current environmental issues, critically evaluating their underlying science and knowledge limitations, and exploring the best-available engineering solutions to some of our most pressing environmental problems. The course will emphasize the interconnected biological, geological, and chemical cycles of the earth system (biogeochemical cycles) and how human activity affects these natural cycles within each of the major

environmental compartments (atmospheric, aquatic, and terrestrial).

Recommended Prep: The course presumes basic knowledge in chemistry, physics, and mathematics at the high school level.

Engineering Sciences 53: Quantitative Physiology as a Basis for Bioengineering

Lindsey Moyer

Fall; MWF 12-1:15

A foundation in human organ systems physiology, including cardiac, respiratory, renal, and neural systems. Quantitative description of organ systems function and control in terms of physical principles and physiologic mechanisms. Simple mathematical models representing key aspects of organ systems function. Emphasis will be given to understanding the ways in which dysfunction in these systems gives rise to common human disease processes, with an introduction to biomedical devices designed to treat dysfunction. The course is designed for freshman and sophomores.

Course Notes: Open to freshmen.

Government 50: Introduction to Political Science Research Methods

Xiang Zhou

Spring; MW 1:30-2:45

This class will introduce students to techniques used for research in the study of politics. Students will learn to think systematically about research design and causality, how data and theory fit together, and how to measure the quantities we care about. Students will learn a 'toolbox' of methods---including statistical software---that enable them to execute their research plans. This class is highly recommended for those planning to write a senior thesis.

Course Notes: This course must be taken for letter grade.

Molecular and Cellular Biology 111: Mathematics in Biology

Elena Rivas

Fall; MW 9-10:15

This course is meant for biologists who want to learn mathematical principles relevant to current biological research, as well as for mathematically oriented students who want to explore applications in biology. About half of the course covers topics on information theory, Bayesian inference, statistics, and probabilistic modeling. The second half of the course covers dynamical systems in biology, including random walks, feedback control, and molecular population dynamics.

Each week-long unit is devoted to one specific topic, and is based in one or more scientific papers selected from the recent literature. For instance, one unit is devoted to Maximum likelihood methods in the context of quantitative

trait loci analysis; another unit explores probabilistic models in the context of inferring ancestry and recombination breakpoints from genomic reads in fly populations.

Recommended Prep: Mathematics 19 or higher.

Psychology 1900: Introduction to Statistics for the Behavioral Sciences

Patrick Mair (Fall), Thomas Rusch (Spring)

Fall; MW 9-10:15

Spring; TBA

Provides a conceptual and practical introduction to statistics used in psychology and other behavioral sciences. Covers basic topics in statistics including: measures of central tendency and variability; probability and distributions, correlations and regression, hypothesis testing, t-tests, analysis of variance, and chi-square tests. Includes a lab section with instruction in statistical analysis using a computer program.

Statistics 102: Introduction to Statistics for Life Sciences

Kevin A. Rader

Spring; MWF 10:30-11:45

Introduces the basic concepts of probability, statistics and statistical computing used in medical and biological research. The emphasis is on data analysis and visualization instead of theory. Designed for students who intend to concentrate in a discipline from the life sciences.

Course Notes: Only one of the following courses may be taken for credit: Statistics 100, 101, 102, 104.

Statistics 104: Introduction to Quantitative Methods for Economics

Michael Parzen

Fall; TTh 10:30-11:45

Spring; MWF 10:30-11:45

A rigorous introduction to statistics for students intending to study economics. Examples drawn from finance, decision analysis and economic decision-making. In addition to descriptive statistics, probability, inference and regression modeling, also covers portfolio optimization, decision analysis, and time series analysis. Students with prior exposure to introductory statistics will find some overlap of material but be exposed to new applications and learn more advanced modeling techniques.

Course Notes: Only one of the following courses may be taken for credit: Statistics 100, 101, 102, 104.

Statistics 110: Introduction to Probability

Joseph Blitzstein

Fall; MW 1:30-2:45

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.
Recommended Prep: Math 1b or equivalent or above.

ETHICS OF HEALTH

Freshman Seminar 23H: Anatomy and Ethical Transgressions in National Socialist (Nazi) Germany

Sabine Hildebrandt

Fall; T 3-5:45

Class Capacity: 12

Consent Required: Instructor

This seminar introduces students to the history and ethics of anatomy, and their relevance for current questions in medicine concerning the human body in life and death. The story of anatomy in National Socialist (NS or Nazi) Germany is an example of ethical transgressions in the anatomical sciences and reveals the complex relationship between anatomists and the Nazi regime. The historic causes of this development will be explored by examining the roots of the biologicistic NS ideology in the connections between anatomy, physical anthropology, the global eugenics movement and German racial hygiene. Many anatomists became members of the NS party, while others were persecuted for so-called “racial” and political reasons. An examination of the history of anatomical body procurement from ancient Greece to the 21st century demonstrates the changes of the traditional sources of bodies for anatomical dissection under NS rule, resulting in the use of many bodies of NS victims for anatomical purposes. Anatomical research changed with the exploitation of the rising number of bodies of executed men and women. Case studies of the work of individual anatomists reveal a gradual shift in the paradigm of anatomy. A few anatomists left the traditional paradigm—i.e. the gain of anatomical knowledge through work with the dead—in favor of a new paradigm—i.e. work with the “future dead”—in human experiments on prisoners who were subsequently murdered. Ultimately, anatomists became complicit with the government through their role in the complete destruction of the perceived “enemies” of the NS regime.

GENED 1058: Tech Ethics: AI, Biotech, and the Future of Human Nature

Michael Sandel, Douglas Melton

Fall; Th 3:45-5:45

The course explores the moral, social, and political implications of new technologies. Will biotechnology and AI enable us to hack humanity? Should we edit the genes of our children, extend the human lifespan, and genetically enhance our athletic ability and IQ? Can algorithms be fair? Will robots make work obsolete? Can smart machines outthink us? In an age of big data and social media, is privacy over? Is democracy?

The course will ask how science and technology are transforming the way we work, learn, make friends, raise children, care for our health, conduct our politics, and understand what it means to be human.

Course Requirements: Anti-req: Cannot be taken for credit if SCRB 60 already complete

GENED 1064: Brains, Identity, and Moral Agency

Steven Hyman

Spring; MW 12-1:15

Class Capacity: 105

Consent Required: Instructor

Advances in brain science have the potential to diminish many forms of human suffering and disability that are rooted in disordered brain function. But what are the ethical implications involved in altering the structure and function of human brains? What’s at stake when we have the ability to alter a person’s narrative identity, create brain-computer interfaces, and manipulate social and moral emotion? In this course, you will ask and attempt to answer these questions, and discuss the implications of mechanistic explanations of decision-making and action for widely-held concepts of moral agency and legal culpability. This course will prepare you to be a thoughtful citizen of a world characterized by rapidly emerging understandings of human brain function, and by new technologies intended to repair or influence human brains.

Course Notes: For students who have taken MCB 80, it is contemplated that there will be a section that incorporates more advanced concepts from neurobiology.

Recommended Prep: LPS A or LS 1a, a 4 or 5 on the AP Biology exam, or equivalent experience in biology

GENED 1115: Human Trafficking, Slavery, and Abolition in the Modern World

Orlando Patterson

Spring; TTh 10:30-11:45

We often think of slavery as being a dark chapter in our past, but this is a tragic oversimplification. What defines slavery in the modern world, and what are the moral, political and social implications of its continued existence? The mechanisms of many forms of bondage are secretive and illegal, making it difficult to quantify the number of people affected by this persistent institution. As we explore its underpinnings, we discover that all of us may be in some way complicit in its survival. This course surveys the nature, types and extent of modern servitude, distinguishing broadly between those resulting from international trafficking such as transnational prostitution, human smuggling into bonded labor, child soldiering and organ trafficking, and more intra-national forms such as debt-bondage and the domestic exploitation of women and other vulnerable groups. You will, by the end of our exploration,

be able to trace the moral and ethical arguments surrounding human slavery in its various forms, and understand the ways in which this problem still affects so many people.

GENED 1116: Medical Ethics and History

David Shumway Jones

Fall; TTh 10:30-11:45

Students will encounter the ethical dilemmas of medical practice throughout their lives, whether with their own health, or with the health their families and friends. This course will equip them with the tools of moral philosophy so that they can recognize, critique, and craft arguments grounded in appeals to utilitarianism, deontology, or rights. But the course will focus on historical analysis of the debates so that students understand how social, economic, and political contexts have influenced moral reasoning. By clarifying their own thinking in the classroom, students will be better equipped to engage in the debates and contribute to the ongoing efforts by medicine to relieve human suffering.

GENED 1150: Medicine and Conflict: The History and Ethics of Healing in Political Turmoil

Soha Bayoumi

Fall; TTh 10:30-11:45

“War is the only proper school for surgeons,” the Ancient Greek physician, Hippocrates, is quoted to have said. This saying has been used to show how medicine and war have been thought for millennia to shape each. Medicine has played a major role in situations of political conflict, ever since human societies engaged in war and started elaborating “just war doctrines,” that determine how belligerent parties should conduct war, as an attempt to “civilize” war and mitigate its scourges. Through an investigation of case studies from the modern and contemporary world, this course will examine the role played by medicine in situations of political conflict, as well as the role played by war and humanitarian crises in the history of medical thought and practice. It will explore how medical knowledge and expertise have been deployed in situations of political violence or tumult and will ponder some of the ethical dilemmas faced by medical professionals in those contexts. Covering cases ranging from surgery in the American Civil War to the provision of medical care in the Syrian refugee crisis, some of the themes discussed will include biomedical ethics in armed conflict, torture, trauma, contagion, and medical innovation in conflict contexts.

Global Health and Health Policy 70: Global Response to Disasters and Refugee Crises

Stephanie Kayden, Michael VanRooyen

Spring; Th 12:45-2:45

Class Capacity: 30

Consent Required: Instructor

Climate change, urbanization, and conflict mean that global disasters are on the rise. How should the world respond when disasters force people from their homes? How can we better help the world’s refugees? This course examines the past, present, and future of the international humanitarian response system. We will explore how Doctors Without Borders, the United Nations, the Red Cross, and other aid agencies came to be and how global response standards, international humanitarian law, and new technologies are shaping worldwide disaster relief.

Through interactive discussions and case studies, students will learn how aid workers interact with governments, militaries, and civil society to provide refugee aid. At the end of the course, students can choose to live the refugee experience during a large-scale, weekend outdoor simulated humanitarian response training program together with other students and professional aid workers from around the world.

Course Notes: Lotteried course, enrollment limited to 30.

Government 94gk: The Politics and Ethics of Medical Care

Gabriel Katsh

Fall; M 3-5:45

Class Capacity: 16

Consent Required: Instructor

This course is an introduction to medical ethics and the ways in which political theory can inform our understanding of the moral and political dimensions of medical care. Using case studies as a launching point, we will explore ideas about autonomy, paternalism, beneficence, and distributive justice, and their application to issues such as informed consent, euthanasia, the right to refuse care, the distribution of scarce resources, and conflicts between patient rights and the public good.

History of Science 148vj: Race, Medicine, and Mass Incarceration

TBA

Spring; Th 3-5:45

Class Capacity: 25

Consent Required: Instructor

There are over two million people locked up in local jails, state prisons, and federal prisons across the United States. Toward the beginning of this multi-disciplinary seminar, we will examine the historical development of this mass incarceration, as well as racial disparities in America’s

criminal justice system. We will then explore some of the medical issues in historical and contemporary U.S. carceral settings, including: medical experimentation on prisoner populations, mental health and suicide, substance abuse, HIV and sexual health, pregnancy and labor conditions, foodborne illnesses, chronic disease, temperature-related medical emergencies, and aging in prisons. Please be advised that some readings for this seminar will refer to instances of violence, sexual assault, and medical trauma.

History of Science 152vp: Technology and Modern Medicine: From the Stethoscope to Nanotech

Yvan Prkachin

Fall; TTh 3-4:15

Since the beginning of the nineteenth century, through to the rise of modern ‘biomedicine,’ the healing arts have been profoundly affected by the development, implementation and social construction of new medical technologies. What have been the effects of these new technologies on the practice of medicine, on our conception of our bodies, and on the success of medical care? This course will examine a number of these crucial themes, and attempt to integrate insights from the history of medicine and the history of technology more generally. In so doing, we will attempt to address a number of related and important historical questions: how do we decide which medical technologies to pursue, and which to ignore? How have we balanced medical progress and technological advancement with a concern for those who are sick now, and for the economics of health care? How and why have medical technologies shaped and been shaped by the broader culture? And, ultimately, has technology been good for medicine? Topics to be examined will include the rise of clinical medicine in early nineteenth century France and its reliance on new diagnostic technologies; visual technologies and diagnosis; microscopical technology and the emergence of bacteriology; technologies of management and the rise of the modern hospital; the x-ray and the emergence of new diagnostic technologies; the technologies of nursing and other health-care professions; antibiotics, drugs and the technologies of mass-production; technology and disease identity; technology, gender and sexuality; technology, race and genetic medicine; contraception, obstetrics and the technologies of reproduction; digital technologies and the computerization of medical records; implantation, prosthesis, and technologies of the body. Throughout the course, we will pay particular attention to the way in which medical technologies have interacted with social categories such as race, class, gender and nationality, as well as to the unique relationship between American medicine and the world of high technology.

History of Science 253: Bioethics, Law, and the Life Sciences

Sheila Jasanoff

Spring; TBA

Class Capacity: 30

Consent Required: Instructor

Seeks to identify and explore salient ethical, legal, and policy issues—and possible solutions—associated with developments in biotechnology and the life sciences.

Course Notes: Offered jointly with the Kennedy School as IGA-515. Cannot be taken for credit by students who have already taken IGA-515.

XREG: HSPH GHP 265: Ethics of Global Health Research

Richard Cash

Spring 2; MW 3:45-5:15

Class Capacity: 30

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.

Course Note: Required for GHP SM2 research students.

Course is Restricted: GHP SM2 research students. Seats will be made available to other students if room is available. Students outside of HSPH must request instructor permission to enroll in this course

Note: This course provides 2.5 credits. In order to receive credit equivalent to a course in FAS, a student must take two 2.5-credit HSPH courses.

XREG: HSPH GHP 288: Issues in Health and Human Rights

Stephen P. Marks

Fall 2: TTh 3:45-5:15

Class Capacity: 32

The aim of this course is to introduce students to the application of the human rights framework to a wide range of critical areas of public health. Through lectures, cases and guest speakers, students will become familiar with the human rights perspective as applied to selected public health policies, programs and interventions. The course clarifies how human rights approaches complement and differ from those of bioethics and public health ethics.

Among the issues to be considered from a human rights perspective are the bioethics, torture prevention and treatment, infectious diseases, violence prevention and responses, genetic manipulation, access to affordable drugs, community-based health management and financing, child labor, aging, and tobacco control.

Course Requirements: Students outside of HSPH must request instructor permission to enroll in this course.

Note: This course provides 2.5 credits. In order to receive credit equivalent to a course in FAS, a student must take two 2.5-credit HSPH courses.

XREG: HSPH ID 250: Ethical Basis of the Practice of Public Health

Daniel Wikler

Fall 1; MW 8-9:30

Class Capacity: 37

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 do not reflect such high priority for health? Should these individual preferences always be respected? 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?

Course Requirements: Students outside of HSPH must request instructor permission to enroll in this course.

Note: This course provides 2.5 credits. In order to receive credit equivalent to a course in FAS, a student must take two 2.5-credit HSPH courses.

HEALTH AND DEMOGRAPHY

Freshman Seminar 22h: My Genes and Cancer

Giovanni Parmigiani

Spring; Th 3-5

Class Capacity: 12

Consent Required: Instructor

The role of a person's genetic background in determining whether he or she will develop cancer, and when, is at the center of public discussions and active scientific investigations. Already, one's genetic background is used in making life-altering health decision aimed at preventing the occurrence of cancer, as was recently the case with actor Angelina Jolie. This seminar will explore the extent to which current scientific knowledge can inform this type of decisions. The goal is to gain enough understanding of the scientific background to critically evaluate the discourse of a genetic counseling session. The course will proceed at first by laying essential foundations of genetic inheritance in humans; cancer evolutionary theories; statistical risk; and decision-making in health care. Subsequently student will read articles from the scientific and popular press, and listen to podcasts. In class we will discuss the readings. There is a good deal of reading and listening, which everyone is expected to do ahead of class. Students can expect readings in genetics and statistics that will stretch them, though it will not always be necessary to understand all the technical details of every paper. Students can also expect to read opinion pieces with which they (as well as I) may disagree. Students will be required to present summaries of the assigned readings, and lead class discussions. They will also be required to write one 5-page double spaced essays at the end of the class, and to lead a class discussion on the topic of their papers. A typical paper is the critique of a scientific or popular press article, chosen from a list of suggested options or identified independently by the student, with my approval, during the first seven weeks of classes. Attendance is essential, not only for the students' education, but for the benefit their contributions provide to the others.

Freshman Seminar 24n: Child Health in America

Judith Palfrey, Sean Palfrey

Fall; M 3-5:30

Class Capacity: 15

Consent Required: Instructor

How can American health care be improved for children? How a nation cares for its children's health is often considered a measure of its commitment to the general citizenry and to its future. The members of the seminar will review together the history of children's health and health care in the United States, exploring the impact of geography, environment, nutrition, clean water, as well as of

the scientific discoveries of the late 19th century and the early 20th century and the emergence of the high technology care of the middle and late 20th century. Then they will pose the question, "Does America provide children and youth the best possible health care available in the 21st century?" To approach this question, students will analyze the current causes of illness, disability and death among U.S. children and youth and compare United States epidemiology with that of other developed and developing nations. Students will also explore how child health delivery is financed.

Freshman Seminar 51d: Predicting Life and Death—Quantitative Approaches to Human Health and Disease

Franziska Michor

Spring; W 12-2

Class Capacity: 12

Consent Required: Instructor

How long does each of us have to live? How does this expectation depend on the extent of exercise, stress, and lifestyle choices such as a love of burgers or long-term smoking? If we are diagnosed with cancer or cardiovascular disease, how many years do we lose, and how does that depend on where we live and how much we earn? Given that millions of people are diagnosed with disease each year, is that data publicly accessible, and is it sufficient to infer the lifespan of an individual patient? Do I want to know how long I have left to live? Can someone else deduce my identity by me being part of a database for lifespan prediction? Do I care if my identity and lifestyle choices become publicly known if it is for the greater good of learning more about preventing disease? How do doctors decide on treatment plans and what can we learn from visiting a radiation oncology clinic where terminal patients are being treated? And finally, how can we use emerging datasets in innovative ways to learn about human health and disease?

Course Notes: There will be a required field trip to the Dana Farber Cancer Institute Radiation Oncology Clinic.

GENED 1063: World Health: Challenges and Opportunities

Sue J. Goldie

Spring; MW 10:30-11:45

Three extraordinary changes in the world present both risks and opportunities to health—unprecedented interconnections across borders, rapidly shifting population dynamics, and changing epidemiological patterns. This course will challenge your assumptions about the world's populations and broaden your perspectives about how health relates to sustainable development.

Using case examples of contemporary health challenges, we will explore the influence of social, political, and

environmental determinants on health, paying particular attention to transnational risks. We will consider solutions from a variety of perspectives, contributions from within and outside the health sector, and interventions at the local, national and global levels. You will be exposed to a variety of methods, from demography to decision science, and will build fundamental skills in data interpretation and graphical literacy. By the end of the course, you will be equipped to thoughtfully analyze and contextualize 21st century global challenges, and to formulate your own opinion about the question – is globalization good or bad for global health?

**Social Studies 68uh: Urban Health and Community
Change: Action Planning With Local Stakeholders**

Flavia Perea

Fall; W 12-2:45

Class Capacity:12

Consent Required: Instructor

This is a project-based course on urban community health. We will examine urban health topics from a macro level in the classroom, while exploring community health issues at the local level by engaging with community stakeholders on a health promotion project. We will explore the social conditions people need to be healthy, and strategies to advance health equity that put people in diverse communities on pathways to health as opposed to disparities. To understand how health promoting environments can be created and sustained, we will discuss how community engagement, participatory and action research, as well as cross-sector collaboration can advance health improvement efforts at the local level. There are great possibilities as well as challenges to creating and sustaining healthy communities, particularly in rapidly evolving cities in major metropolitan areas. This course will provide a window into how pressing, highly visible and complex national issues are experienced and addressed on the ground, and the real-world complexities involved in advancing meaningful community change. Students interested in enrolling in this course should complete the short survey/lottery form on the course Canvas site for the first class. Open to students in all concentrations. Enrollment capped at 10.

Sociology 1046: Life and Death by Design

Jason Beckfield

Fall; MW 12-1:15

In this course, we will study health differences between social groups. We will begin by examining the extent to which health is unevenly distributed across groups defined by nationality, neighborhood, race, gender, and class. We will then seek to pinpoint the reasons for these disparities with a detailed analysis of the pathways through which these

factors are linked to health status. Finally, we will discuss new research on the sociology of population health that shows how health disparities depend on meso- and macro-scale causes like neighborhoods, social policy arrangements, global organizations, and climate change.

Course Notes: May be used as an introductory course or elective.

HEALTH, CULTURE, AND SOCIETY

Freshman Seminar 22d: Time for Sleep: Impact of Sleep Deficiency and Circadian Disruption in Our 24/7 Culture

Charles Czeisler

Fall; T 3-5:30

Class Capacity 12

Consent Required: Instructor

America is a sleep-starved nation. The Institute of Medicine estimates that between 50 and 70 million Americans are suffering from chronic sleep deficiency or sleep disorders, increasing their risk of weight gain, heart ailments, mood disorders, errors and catastrophic road accidents that kill more than 7,000 and maim more than 50,000 Americans annually. Children of all ages are sleeping about two hours less per night than they did in prior generations, rendering them hyperactive and irritable and compromising their ability to sustain attention and learn in school. This hyperactivity leads many sleep-deprived children to be misdiagnosed with ADHD and treated for years with amphetamines and other stimulants that further disrupt sleep. Yet, prevailing cultural attitudes lead us all to undervalue sleep and lionize all-nighters, such that most patients with sleep disorders remain undiagnosed and untreated. This seminar will explore the function of sleep, the physiologic factors that regulate sleep and circadian rhythms, the impact of exposure to artificial light on sleep and circadian rhythms, historical and cultural differences in sleep habits, and the consequences of sleep deficiency, circadian disruption and sleep disorders on both the brain and the body. Public policy issues, such as school start times, limits on resident physician work hours, drowsy driving laws, and proposed regulations to screen transportation workers for sleep disorders will be debated. Students will be encouraged to track their own sleep patterns throughout the semester, identify the personal, structural and cultural barriers to maintaining healthy sleep while in college, and propose strategies to improve sleep health at Harvard College, the local community and the nation.

Freshman Seminar 23k: Insights from Narratives of Illness

Jerome Groopman

Spring; M 12:45-2:45

Class Capacity 12

Consent Required: Instructor

A physician occupies a unique perch, regularly witnessing life's great mysteries: the miracle of birth, the perplexing moment of death, and the struggle to find meaning in suffering. It is no wonder that narratives of illness have been of interest to both physician and non-physician writers.

This seminar will examine and interrogate both literary and journalistic dimensions of medical writing. The investigation will be chronological, beginning with "classic" narratives by Tolstoy, Chekhov, and Kafka, and then moving on to more contemporary authors such as William Carlos Williams, Richard Selzer, Oliver Sacks, Susan Sontag, and Philip Roth. Controversial and contentious subjects are sought in these writings: the imbalance of power between physician and patient; how different religions frame the genesis and outcome of disease; the role of quackery, avarice, and ego in molding doctors' behavior; whether character changes for better or worse when people face their mortality; what is normal and what is abnormal behavior based on culture, neuroscience, and individual versus group norms. The presentation of illness in journalism will be studied in selected readings from the New York Times' and Boston Globe's Science sections, as well as periodicals like the New Yorker, The New York Review of Books, Harper's, and The Atlantic. The members of the seminar will analyze how the media accurately present the science of medicine or play to "pop culture." The seminar will study not only mainstream medical journalists, but so called alternative medical writers such as Andrew Weil also. Patients with different diseases will be invited to speak to the members of the seminar about their experiences. Students will try their hands at different forms of medical writing, such as an editorial on physician-assisted suicide that would appear in a newspaper and a short story that describes a personal or family experience with illness and the medical system.

Course Notes: This seminar will meet for only 2 hours weekly within the time block.

Freshman Seminar 25n: Finding Connections: Perspectives on Psychological Development and Mental Illness

Nancy Rapport

Fall; W 3-5

Class Capacity 12

Consent Required: Instructor

The seminar's challenge will be to deepen our understanding of human development and how individuals cope with serious emotional or social difficulties (neglect, bipolar disorder, autism, depression, schizophrenia). We will use multiple perspectives: medical observations and texts that provide practical knowledge (e.g. The New England Journal of Medicine review articles), narrative readings to understand how patients experience the meaning of illness from the inside out (e.g. The Center Cannot Hold), visitors who will discuss their experience with mental illness, and how development-related mental illness is portrayed in the press (e.g. The New Yorker articles). We will start with the mental life of babies and how scientists interpret infants'

nonverbal ways of finding safety and security. This begins the journey of our understanding fundamental needs for tenderness, holding, and making meaning. Understanding how conditions such as autism, depression, and schizophrenia are described in clinical research and literature will help us to appreciate the biological vulnerabilities and relational patterns that may disrupt the human connection. We will examine the resourcefulness required for both fragility and resiliency. Throughout the seminar, the instructor, as a practicing child and adolescent psychiatrist, will bridge the gap between research findings, clinical applications, and everyday insight.

Freshman Seminar 710: The Heart of Medicine: Patients and Physicians and the Experience of Serious Illness

Susan Block

Fall; W 3-5

Class Capacity 12

Consent Required: Instructor

Sickness and death are universal human experiences. Yet we are often uncomfortable talking and thinking about them in relation to ourselves, and to those whom we love. The core thesis of this seminar is that exploring these human vulnerabilities is a way of learning to live a more meaningful life, strengthening relationships, and helping us be better caretakers of people we love, and of people whom we serve in a professional role. In this seminar, we propose to examine, from multiple perspectives, the social, cultural, psychological, economic, and spiritual factors that influence the experience of serious illness. The seminar will draw on core readings from the humanities, social sciences, and medicine to deepen understandings of how people experience and live and die with a serious illness. Opportunities for discussion, reflection, live interviews, case analysis, and experiential exercises will take place in class; additional field learning opportunities (e.g., home visits, participation in hospital-based teaching rounds) may also be available outside of class.

GENED 1045: Can We Choose to Be Healthy?

Nancy Long Sieber

Spring; TTh 12-1:15

We often hear how important it is to make “healthy choices”—to eat the right foods, to get enough exercise, to get plenty of sleep. But to what extent is it really within our power as individuals to “choose” to be healthy? In making choices about your own life, have you ever been confused by conflicting data or faced other obstacles in your pursuit of good health? Millions of Americans experience lifestyle constraints that may prevent them from putting their health first—from socioeconomic constraints that limit their dietary choices, to labor market constraints that affect their abilities to set healthy schedules, to structural and mobility

constraints that compel them to live near areas of high pollution or in so-called “food deserts.” Moreover, most of us struggle to understand the science behind current health controversies—from the growing opioid epidemic to debates over pesticide regulations. This challenge is compounded by the increasing politicization of science, which leads to objective findings becoming distorted as they are twisted to fit one agenda or another. Finding reliable scientific information is a challenge for anyone who wants to fully understand and participate in the national conversation about these complex issues.

In this class, you will learn how scientists approach public health problems, and how their findings are used to assess and intervene against threats to human health. We will begin by looking at health disparities across the US, and considering the biological, behavioral and societal factors that contribute to them. We will then closely examine three pertinent public health issues that significantly affect the health of Americans: 1) mental health and addiction, 2) obesity and cardiovascular disease, and 3) the adverse effects of exposure to environmental pollutants. We will spend a portion of most classes discussing relevant current events, and weekly section meetings will focus on an in-depth exploration of a case study. Our goal is for you gain a greater understanding of your own body, and of what can be done on a personal and societal level to prevent disease. This will ultimately give you the skills you need to analyze and make decisions about current and future public health challenges.

GENED 1078: Disease, Illness, and Health through Literature

Karen Thornber

Fall; MW 3-4:15

Inevitably, at some point in our lives, most of us will develop a health condition that requires medical treatment and care. We also, regardless of our career, are likely to be called on to provide care for those whose health conditions make it impossible for them to care for themselves. What does it mean to be an effective partner in care, both in our personal lives and, for those in the health professions, in our professional lives? How can we best prepare ourselves to be effective care partners, whether we are the givers of care, the receivers of care, or often both? What should our short-term and long-term goals be and how can we best implement these goals? As healthcare costs soar and considerable suffering from disease and illness continues despite regular advances in medical technology, what should we advocate for in our communities, our societies, our nations, and beyond to ease the burden of disease and illness on caregivers and care recipients alike?

This course provides the ideal space for you to contemplate these and similar fundamental questions, which all of us

increasingly must face. Class discussions, readings, and written assignments will provide the tools for you to become more effective advocates for compassionate care, both now and in the future. Engaging with a diverse range of memoirs, creative non-fiction, life writing, and novels from five continents by physicians, patients (including physician-patients), and concerned citizens alike, the course challenges many fundamental preconceptions regarding disease, illness, health, and care. We will interrogate what it means to promote healing and wellbeing in our personal and professional lives.

**GENED 1093: Who Lives, Who Dies, Who Cares?
Reimagining Global Health**

Arthur Kleinman, Paul Farmer, Anne Becker, Salmaan Keshavjee

Fall; TTh 10:30-11:45

If you are sick or hurt, whether you live or die depends not only on biological factors, but social ones: who you are and where you are, what sort of healthcare system is available to help you survive, and what kind of care is available to help you recover, if society believes you deserve it. Most medical research narrowly focuses on the biological basis of disease, but this course takes a novel biosocial approach to reveal how governments, institutions, and histories shape health and well-being, how poverty and racism get into someone's lymph nodes, how cost-saving measures manifest as tuberculosis in someone's lungs. In doing so, the course challenges the conventional assumptions within the field of global health—examining how interventions influence what happens after a catastrophe in unexpected ways, how the persistence of health inequalities over centuries can be explained, how the structures of powerful institutions influence the policies they develop, how the poor deserve not only health care but high quality health care, and how caregiving and global health are urgent moral practices.

**African and African American Studies 197: Poverty,
Race, and Health**

David Williams

Fall; T 12-2:45

This course critically examines the health status of the poor, and of African Americans and other socially disadvantaged racial and ethnic groups in the US. Attention will be focused on the patterned ways in which the health of these groups is embedded in the social, cultural, political, and economic contexts, and arrangements of US society. Topics covered include the meaning and measurement of race, the ways in which racism affects health, the historic uses of minorities in medical research, how acculturation and migration affects health, and an examination of the specific health problems that disproportionately affect nondominant racial groups.

**Anthropology 1900: Counseling as Colonization? Native
American Encounters with the Clinical Psy-ences**

Joseph Gone

Fall; M 12-2:45

Class Capacity: 25

Consent Required: Instructor

American Indian, First Nations, and other Indigenous communities of the USA and Canada contend with disproportionately high rates of “psychiatric” distress. Many of these communities attribute this distress to their long colonial encounters with European settlers. Concurrently, throughout the 20th century, the disciplines and professions associated with mind, brain, and behavior (e.g., psychiatry, psychology, psychoanalysis) consolidated their authority and influence within mainstream society. These “psy-ences” promote their professional practices (e.g., diagnosis, psychotherapy) as plausible remedies for Indigenous social suffering, but many Indigenous communities remain skeptical of—and resistant to—these clinical approaches, primarily for cultural and political reasons. In this seminar, we will consider whether and how the concepts, categories, tools, and techniques of the mental health professions might be appropriately adapted and/or adopted for use with Indigenous communities in an increasingly globalized world. In recognition of the (post)colonial status of these populations, we will attend closely to alterNative cultural and spiritual approaches that have been identified and promoted by Indigenous people themselves as conducive to healing and wellness. This course is designed for upper-level undergraduate students interested in medical anthropology, professional psychology, pre-medicine, Indigenous studies, and related social and health sciences. Students will participate in regular seminar discussions, write routine responses to assigned readings, and submit major independent research papers addressed to the promotion of Indigenous well-being. Student engagement and exchange during class is essential, so routine attendance and participation are expected throughout the semester.

**History of Science 142vj: History and Politics of the
American Obesity Epidemic**

TBA

Spring; TTh 12-1:15

Obesity has become a leading public health concern in many parts of the world. In the United States, rates of obesity rocketed between 1980 and the early-2010s. How did this happen? And why is the obesity epidemic controversial? What does looking at the history and politics of what has been called “the obesity epidemic” reveal about broader issues of health and society? This course will illuminate these questions and more as we survey the trajectory of obesity from many dimensions since the beginning of the twentieth century.

History of Science 145: Medicine and Health in America

Eram Alam

Spring; TBA

This course surveys major historical developments in medicine and health in the United States during the modern period. We will analyze medicine and health within social, cultural, and political contexts to better understand the relationship between medicine and power. Topics will include: citizenship, nationalism, and imperialism; race, gender, and the body; capitalism and the medical marketplace; professionalization, expertise, and authority; crises and epidemics; technology and therapeutics; and questions of care.

Mind, Brain, and Behavior 980p: The Role of Music in Health and Education

Lisa Wong

Fall; Th 3-5

Class Capacity: 18

Consent Required: Instructor

Music shapes the course of human history at both a micro and macro scale; it can make an individual weep and rally crowds of thousands to cheer. The "universal language" has the power to connect people who share no other common ground. Its power to bind people together is intuitively understood, but only through recent neuroimaging advances over the past 50 years have scientists been able to move past intuition to reveal its impact on the brain. Through this course, we will examine the exciting progress of the fields of music and medicine, through a variety of lenses. Who are the key investigators and practitioners in today's emerging music / brain landscape? What are the latest discoveries about how music influences the brain? How does the direct application of music function — how do we hear, how do we listen, and what happens when this process goes wrong? What has music's role been through human history, and where does that bring us today? This course invites the student to deepen his/her relationship with music exploring different aspects of the art form through several perspectives, including neuroscientist, educator, musician, therapist, patient, and healthcare provider. By the end of this course, the learner will (1) understand the effect of music on the developing brain; (2) understand the mechanism of hearing music; (3) consider the pathophysiology of disordered movement and hearing and how music can be used therapeutically; and (4) understand how other disciplines can add educational and neuroscientific knowledge to therapeutic uses of music. Students will be invited to bring their own experiences to the seminar, and to pursue a final independent project, conducting a combination of scientific, historical, education, or psychology research. In the final weeks, they will present their findings to the group in oral, written or musical format.

Given the transdisciplinary nature of the work, students will be challenged to read literature from a variety of genres, from lay literature to educational monographs to scientific papers. This will lead to discussion of one of the key questions in interdisciplinary study between the sciences and the arts: how to research and document outcomes. How do we agree on common definitions of research in disparate fields? What constitutes research to a musician? A music therapist? A neuroscientist? A physician? What is proof of success? What can/should be measured?

Course Notes: Preference to juniors in MBB tracks or MBB secondary field.

Spanish 61ph: Spanish for Public Health

Adriana Gutierrez

Spring; TTh 12-1:15 (section 1) & 1:30-2:45 (section 2)

An advanced language and culture class that examines literature, documentary, films, journalistic articles and other media portraying the cultural, political, sociological and financial impact of Public Health issues in Latin America. Students' linguistic competency is developed through discussion of the issues of public health. Grammar reviews, and weekly writing assignments. Students will also choose a specific project for a Public Health issue in Latin America and research its possible outcome and cultural, social, political, economic consequences.

Course Notes: Interested students must apply in writing to Dr. Gutiérrez no later than January 15. Not open to auditors. May not be taken Pass/Fail, but may be taken Sat/UnSat by GSAS students.

Recommended Prep: Prerequisite: A score between 751 and 780 on the SAT II test or Harvard Placement test, a Spanish 50-level course, or permission of course head. Students are allowed to take a maximum of two courses at the 60-level in Spanish, not including Spanish 60.

HISTORY AND PRACTICE OF MEDICINE

Freshman Seminar 24g: A Brief History of Surgery

Frederick Millham

Fall; Th 6-8:45

Class Capacity 15

Consent Required: Instructor

The history of surgery begins with the Hippocratic physicians whose principles were based, at least partly, on observation and measurement. However, surgical thinking for first three quarters of the “modern era” was dominated by Galen of Pergamum who, “fooled by his monkeys,” established a school thought as false as it was tightly held. The exposure of Galen’s errors by Vesalius in 1543 and Harvey in 1628 began a Medical Enlightenment. It would take until the 19th century for the next era of discovery to begin. During this time, the pace and significance of medical discovery increase, yet adoption of good ideas, like antisepsis, seems to take much too long, while bad ideas find adherents in spite of poor or no supporting evidence. Throughout this period, the ghost of Galen continues to haunt hospitals and battlefields. It will not be until the 1930’s that Galenism is banished from the wards. Our study will track this history and conclude with a consideration of the management of combat casualties from the time of the first “modern” surgeon, Ambrose Pare, to that of contemporary forward surgical teams in Afghanistan and Iraq. The seminar will consist of weekly discussion, informed by assigned reading and independent inquiry. We will visit the site of the first use of ether anesthesia, and duplicate William Harvey’s experiments in the anatomy lab. From time to time we will be joined by other doctors with expertise in specific areas such as infectious disease, combat surgery and anatomy.

Classical Studies 165: Medicine in the Greco-Roman World

Mark Schiefsky

Spring; TTh 12-1:15

Theories and practices of health and healing in the ancient Greco-Roman world, with special emphasis on the relationship of learned medicine to philosophy and other healing traditions.

East Asian Languages and Civilizations 170: Medicine and the Body in East Asia and in Europe

Shigehisa Kuriyama

Fall; MW 10:30-11:45

Comparative historical exploration of the striking differences and unexpected similarities between traditional conceptions of the body in East Asian and European medicine; the evolution of beliefs within medical traditions;

the relationship between traditional medicine and contemporary experience.

Global Health and Health Policy 50: The Quality of Health Care in America

Ashish Jha, Anupam Jena

Spring; TTh 3-4:15

Class Capacity: 42

Consent Required: Instructor

Offers information and experiences regarding the most important issues and challenges in health care quality. Overview of the dimensions of quality of care, including outcomes, overuse, underuse, variation in practice patterns, errors and threats to patient safety, service flaws, and forms of waste. Each session focuses on one specific issue, exploring patterns of performance, data sources, costs, causes, and remedies. Explores desirable properties of health care systems that perform at high levels in many dimensions of quality.

Course Notes: Lotteried course, enrollment limited to 42.

History of Science 143vp: Histories of Therapeutics

Scott Podolsky

Fall; M 3-5:45

Class Capacity: 15

Consent Required: Instructor

Therapeutic interventions – from “bleeding” patients in the early 19th century through prescribing antibiotics today – have been central to medical practice and identity. This seminar course will rely on robust engagement with primary and secondary sources to help us examine the scientific, social, cultural, economic, and regulatory forces shaping therapeutic evolution in the United States over the past two centuries. Along the way, we will consider such issues as: the tempo and mode of therapeutic evolution; the changing notion of therapeutic efficacy; and the role of the marketplace and the parallel attempt of reformers to define and promote “rational” practice. Several sessions will be held at the Countway Medical Library, where students will be exposed to the unique archival and rare book and journal resources of its Center for the History of Medicine.

History of Science 147v: Graphic! Visualizing Medicine from Textbooks to Comics

Soha Bayoumi

Spring; TBA

Visuals play an important role in the history and practice of medicine, from medical textbooks to medical imaging, and from hospital signage and public health posters to comics and graphic novels. This course will examine the use of visuals in medicine, but will place particular emphasis on a new academic and creative field known as “graphic medicine”—medical comics and graphic novels. Over the

course of the semester, we will ask questions about how attending to the visual allows us to think in new ways about diagnostic practices, therapeutics, medical consumerism, doctor-patient communication, and ways in which patients and caregivers narrate their personal experiences of disease. We will pay careful attention to questions of class, race and gender, and to larger ethical and political issues raised by our materials.

History of Science 170: Broken Brains

Anne Harrington

Fall; M 9-11:45

Class Capacity: 20

Consent Required: Instructor

An exploration of the complex relationship between doctors and scientists who study and treat different kinds of “broken brains,” the patients they study and treat, and larger public conversations about being human in today’s neurological society. Topics include iconic cases of brain damage that catalyze new scientific understandings (like the case of H.M.), the study of brain damage in war, the emergence of writings (including memoirs and novels) that attempt to describe “what it is like” to suffer from disorders like autism and Alzheimer’s, and controversies over recent efforts to see psychiatric disorders like depression as simple products of a chemically “broken brain.”

Psychology 980jo: Understanding Autism

Jill Hooley, Katherine Powers

Spring; TBA

Class Capacity: 16

Consent Required: Instructor

One in 50 children is currently diagnosed with autism spectrum disorder (ASD), yet we still do not know what causes it, or how best to treat it. This course provides students with a broad, interdisciplinary exploration of ASD from infancy through adulthood. We explore three major themes: 1) the psychological and neurological drivers of ASD, including deficits in social cognition, executive function and perception; 2) the epidemiology and clinical practice of ASD, including diagnosis and treatment modalities, and individual and sex/gender differences; and 3) the personal and societal impact of ASD, including discussion of quality of life, neurodiversity, policy and advocacy.

Class Notes: The instructor is John Knutsen, jknutsen@mgh.harvard.edu.

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych AP=5 or IB =7 or Psyc S-1) and at least one foundational course from PSY 14, PSY 15, PSY 16, PSY 18 or Science

of Living Systems 15 before enrolling in this course; or permission of instructor.

Women, Gender, and Sexuality 1281: Hysterical Women: A History

Anouska Bhattacharyya

Spring; Th 12-2:45

Class Capacity: 15

Consent Required: Instructor

What does it mean when contemporary media sources characterize celebrity figures, or frenzied consumers, as 'hysterical'? How are "hysteria" and "insanity" related, and what are the historical roots of these loaded concepts? This seminar addresses the complex history of hysteria by asking how this medicalized affliction has assumed a multiplicity of forms, especially on feminized and non-white bodies. As depicted through newspapers, multimedia sources, medical literature, sociological articles, and psychoanalytic texts, 'hysteria' affords a unique lens onto the social, cultural and medical history of mental and physical suffering. In a postcolonial world, the term has taken on even more complexity. As we compose a 'history of hysteria,' we will reflect on who gets to record history and whose narratives get left out.

POLITICS OF HEALTH

History of Science 141: Foreign Bodies: On Health and Migration

Eram Alam

Fall; T 9-11:45

Class Capacity: 20

Consent Required: Instructor

During the twentieth century, unprecedented human mobility has raised significant questions regarding migration and health. Whether coerced or voluntary, these migratory flows reverberate through individuals, communities, populations, environments, and the body politic in unexpected ways. This course will focus on the relationship between health and migration and ask the following questions: How are moving bodies named and managed? What are the political, economic, juridical, and medical implications of movement? How is risk defined and constructed in relation to migration? Readings will include case studies from around the world, supplemented with theoretical and literary texts

XREG: HKS SUP 575 / HSPH HPM 247: Political Analysis and Strategy for U.S. Health Policy

Robert Blendon

Spring; MW 4:15-6

Class Capacity: 25

Health policymaking in the U.S. has a strong political dimension. This course offers analytical insights into understanding U.S. health policymaking and developing political strategies that influence health policy outcomes. The course provides both the theoretical basis and strategic skills for those in future leadership roles to influence the health policy process. Major topics to be covered include analyzing how health policy is shaped by interest groups, media, public opinion, legislative lobbying, elections, coalition building, policy legacies, institutions, and the politics of information. Student-led case studies focus on marijuana legalization in Colorado, defunding Planned Parenthood, as well as major movements toward comprehensive national health insurance in the U.S. including the Clinton and Obama health plans and the debate over the implementation of the Affordable Care Act. Leaders in political strategy from both the health and political fields will be guest lecturers.

Course Note: Not open to auditors.

XREG: HKS IGA 422: Global Food Politics and Policy

Robert Paarlberg

Spring; TTh 10:15-11:30

Class Capacity: 29

This course reviews the policy landscape around food and farming in rich and poor countries. This is a highly contested landscape, with scientists, commercial farmers, agribusiness and food companies, environmentalists, consumer organizations, and social justice advocates often holding sharply different views. Policy actions by national governments usually drive the system, together with the behavior of international organizations, private companies, NGOs, social entrepreneurs, and humanitarian relief agencies. Understanding the economic and institutional foundation beneath these actions is key to effective public policymaking. Food markets can be global, but agricultural circumstances are highly localized and can differ dramatically between rich and poor countries. The poor still rely on low-resource farming systems not well supported by public policy, while most rich countries benefit from highly capitalized agricultural sectors that receive generous subsidies from government. Nutrition circumstances differ as well, as persistent hunger is still a deadly challenge in many tropical countries, while in rich countries (particularly the United States) excessive food consumption and obesity are now a more prominent diet-linked threat to health. The environmental impact of different farming and livestock systems, and different dietary patterns, will be explored and debated. Fish farming and wild catch fisheries will be examined. Attention will also be paid to policies that address consumer choice, food safety, genetically modified foods, and animal welfare. Course requirements will include a decision memo, op-ed style essays, and participation in briefs or debates in class.

XREG: HSPH GHP 244: Health Sector Reform: A Worldwide Perspective

Thomas Bossert

Fall 2; TTh 2-3:30

Class Capacity: 67

This course is designed to give students an in depth understanding of health systems, and processes to reform them, using examples from middle and low-income countries. It presents two of the leading analytical frameworks for the analysis of health systems: the Harvard/World Bank “Flagship Approach” and the WHO “Building Blocks” approach. It first focuses on the broad objectives of health systems in these two approaches and presents some of the matrixes used to measure them. It also provides analytical tools for addressing ethical and political issues about health reform. It introduces the concepts of “control knobs” and “building blocks” for developing appropriate options to reform the systems in policy areas of

financing (including tax and insurance based systems), payments to providers, organizational changes like decentralization and use of private sector, as well as human resources strategies and technological transitions. The course involves case studies, class discussion and lectures, and review of academic literature and international and governmental reports. The mid-term and final papers provide guidance in making strong analytical and logical arguments to apply the framework concepts to the health system of a country chosen by each student.

Class Notes: This class has priority enrollment. Cross-Registrants and Non-Degree Students will be enrolled on a space available basis after the enrollment deadline for the course.

Course Requirements: Students outside of HSPH must request instructor permission to enroll in this course. This course provides 2.5 credits. In order to receive credit equivalent to a course in FAS, a student must take two 2.5-credit HSPH courses.

XREG: HSPH GHP 269: The Political Economy of Global Health

Jesse Bump

Spring 2; MW 9:45-11:15

Class Capacity: 67

This course presents theoretical perspectives, empirical cases and research issues in policy analysis and political economy in global health. The focus is on analytical and methodological issues. The main purpose is to examine the political economy constraints on national and global health initiatives, the role of international agencies, the impact of non-governmental organizations, and the role of the state.

Course Activities: All students will be expected to participate actively in class discussions and submit three assignments. Doctoral students in GHP must write a final paper; master's students and non-GHP doctoral students have the option to either write a final paper or complete a take-home final exam. Exams and papers will constitute 80% of the grade and class participation 20%.

Class Notes: This class has priority enrollment. Cross-Registrants and Non-Degree Students will be enrolled on a space available basis after the enrollment deadline for the course.

Course Requirements: Students outside of HSPH must request instructor permission to enroll in this course. This course provides 2.5 credits. In order to receive credit equivalent to a course in FAS, a student must take two 2.5-credit HSPH courses.

SCIENCE OF DISEASE

GENED 1027: Human Evolution and Human Health

Daniel Lieberman

Spring; TTh 1:30-2:45

How and why did humans evolve to be the way we are, and what are the implications of our evolved anatomy and physiology for human health in a post-industrial world? Why do we get sick, and how can we use principles of evolution to improve health and wellbeing? To address these questions, this course reviews the major transitions that occurred in human evolution, from the divergence of the ape and human lineages to the origins of modern humans. Also considered are the many effects of recent cultural and technological shifts such as agriculture and industrialization on human health.

GENED 1129: Infectious Diseases and Social Justice

Donald Goldmann

Fall; MW 1:30-2:45

Class Capacity: 59

Consent Required: Instructor

Advances in prevention and treatment of infectious disease have left large segments of the global population behind. This course studies the societal impacts of nine infectious diseases: HIV/AIDS, malaria, plague, polio, cholera, smallpox, yellow fever, syphilis, and tuberculosis. As you trace these diseases through history, you will learn about their epidemiology and how they make people sick, explore their effects on humanity as seen through the lenses of history, literature, film, music, and drama, and grapple with questions about injustice, inequity, and stigmatization. Classes will be highly interactive and include case studies, provocations, role plays, advocacy pitches, a mock trial, debates, and collaborative learning. You will leave this course with a holistic understanding of infection as an issue that requires not only medical and scientific advances, but also societal cures.

Chemistry 101: Chemical Biology Towards Precision Medicine

Stuart Schreiber

Fall; TTh 10:30-11:45

Class Capacity: 125

Chemical Biology Towards Precision Medicine teaches students principles of modern organic synthesis, chemical biology and human biology relevant to the discovery of safe and effective small-molecule therapeutics in the future. The course will explore patient-based 'experiments of nature' that illuminate disease, including cancer, diabetes, infectious disease and psychiatric disease, among others. Students will then use their knowledge of chemistry and chemical biology

to propose research yielding novel small molecules that affect biological systems by mechanisms suggested by the experiments of nature. Chem 101 aims to prepare students for the next decade where academic research tests hypotheses emerging from human biology in humans using novel small-molecule probes.

Human Evolutionary Biology 1328: Evolutionary Medicine: Comparative Perspectives on Medical, Surgical and Psychiatric Illness

Barbara Natterson-Horowitz

Spring; TBA

Heart attacks, breast cancer, anxiety and eating disorders occur across the animal kingdom. Taught by a physician, the course explores the species-spanning and evolutionary origins of medical, surgical, and psychiatric illnesses. A 'mini-medical school' format will be used to introduce students to ten forms of human pathology emphasizing the typical mechanistic explanations of disease causation offered by physicians followed by in depth evolutionary analyses. Both physical and mental illnesses will be explored across the animal kingdom with a special focus on how emerging awareness of psychopathology in animals can alter the perception (stigma) and treatment of mental illness in human beings.

Life Sciences 2: Evolutionary Human Physiology and Anatomy

Daniel Lieberman, George Lauder, Ian Wallace

Fall; MWF 12-1:15

Why is the human body the way that it is? This course explores human anatomy and physiology from an integrated framework, combining functional, comparative, and evolutionary perspectives on how organisms work. Major topics, which follow a life-course framework, include embryogenesis, metabolism and energetics, growth and development, movement and locomotion, food and digestion, stress and disease, and reproduction. Also considered is the relevance of human biology to contemporary issues in human health and biology.

Course Notes: This course includes a weekly 3-hour lab. This course may not be taken Pass/Fail.

Mind, Brain, and Behavior 980b: Exploring Addiction

Gene Heyman

Spring; Th 6-8

Class Capacity: 15

Consent Required: Instructor

Course goals include an introduction to the varied and conflicting claims about the nature of addiction. Topics include (1) the characteristics of addiction as revealed in biographies, epidemiological studies, clinical research, and "natural experiments;" (2) the current "drug overdose

epidemic," including an opportunity to explore its social-economic correlates; (3) genetic influences on alcohol consumption and AA; (4) drug-induced cognitive changes and their implications for drug use; (5) smoking; (6) consideration of the consequences of legalizing marijuana; and (7) an introduction to research-based, quantitative choice models (e.g., delay discounting). The section on drug overdoses includes access to EXCEL files that combine national, state-level data on drug overdoses, prescription sales, and social-economic measures (e.g., "social capital").

Mind, Brain, and Behavior 980m: Functional Neuroimaging of Psychiatric Disorders: Insights into the Human Brain-Mind

David Silbersweig

Spring; Th 3-5

Class Capacity: 15

Consent Required: Instructor

Functional brain imaging has revolutionized the study of systems-level behavioral neuroscience and psychiatric disorders, through the ability to localize and characterize distributed brain activity directly associated with perception, cognition, emotion and behavior in disorders where there are not gross brain lesions. This seminar will introduce students to translational neuroimaging methods at the interface of neuroscience, psychology and medicine. It will cover recent and ongoing advances in our understanding of fronto-limbic-subcortical brain circuitry across the range of psychiatric disorders (e.g. mood disorders, anxiety disorders, psychotic disorders, personality disorders, addictions). It will discuss new, emerging biological (as opposed to descriptive) taxonomies and conceptualizations of mental illness and its treatment. It will explore the implications of such knowledge for issues such as consciousness, meaning, free will, emotion, resilience, and religiosity. It will incorporate clinical observations, scientific data and readings, and examine future directions in brain-mind medicine.

Molecular and Cellular Biology 64: Cell Biology in the World

Robert Lue

Spring; MW 3-4:15

This course teaches fundamental concepts in cell biology in the context of individual life histories drawn from different parts of the world. Each life case focuses on key aspects of human development, growth, aging and disease while providing a nuanced view of the interplay between the life sciences, geography and culture. For example, a comparative discussion of aging in the United States and Japan is used to explore diet, cellular metabolism and its relationship to protein damage and turnover, while the Human Immunodeficiency Virus and AIDS in South Asia is

used to explore mucosal immunity and the basis for estimating relative infection risk. Each case delves into the cell biology of major biological events across the life history of the human.

Molecular and Cellular Biology 169: Molecular and Cellular Immunology

Shiv Pillai

Fall; TTh 10:30-11:45

The immune system is frontier at which molecular biology, cell biology, and genetics intersect with the pathogenesis of disease. The course examines in depth the cellular and molecular mechanisms involved in the development and function of the immune system and also analyzes the immunological basis of human disease including AIDS and other infectious diseases, autoimmune disorders, allergic disorders, primary immunodeficiency syndromes, transplantation, and cancer.

Recommended Prep: Genetics and cell biology strongly recommended.

Course Requirements: Prerequisite: LPS A OR LS 1a

Molecular and Cellular Biology 186: Sleep and Circadian Clocks: from Biology to Public Health

Charles Czeisler, Frank Scheer, Shadab Rahman, Melissa St. Hilaire

Spring; W 3-5:45

The impact of the brain's circadian clock on sleep becomes evident when we travel across time zones or shift our sleep on weekends. How does this clock work? How does light from a tablet or smartphone affect our biology? What is the best time for sleep? What about naps? This course will explore the neurobiology of the brain's circadian clock that regulates the timing and structure of sleep, its interaction with the periodic environment, and the consequences of circadian disruption in our 24/7 society on health, performance and safety.

Organismic and Evolutionary Biology 50: Genetics and Genomics

Daniel Hart, Robin Hopkins

Fall; TTh 12-1:15

Fundamental concepts in genetics and genomics forming a critical foundation for biology approached from two perspectives: (1) as a body of knowledge pertaining to genetic transmission, function, mutation, and evolution in eukaryotes and prokaryotes; and (2) as an experimental approach providing a toolkit for the study of biological processes such as development and behavior. Topics include structure, function, transmission, linkage, mutation, and manipulation of genes; genetic approaches in experimental studies of biological processes; and analysis of genomes in individuals and populations. Related ethical issues also

discussed include genetically modified organisms, gene therapy, genetic testing, personalized medicine, and genetic privacy.

Psychology 18: Abnormal Psychology

Joshua Buckholtz

Fall; MW 6-7:15

Introduction to the study of psychological dysfunction. Focuses on abnormal behavior as it relates to the definition, etiology, and treatment of major symptom domains. This course will emphasize critical evaluation of the causes and mechanisms of mental illness, with special attention paid to recent neuroscientific and genetic research on the neurobiology of psychopathology.

Course Notes: This course counts toward foundational requirements for Psychology and should be taken before courses at the 1000 level or higher.

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych AP=5 or IB = 7) before enrolling in this course.

Psychology 980t: Eating Disorders

Jill Hooley, Katherine Powers

Spring TBA

Class Capacity: 16

Consent Required: Instructor

The goal of this course is to provide a comprehensive overview of DSM-5 feeding and eating disorders (EDs) with a primary focus on anorexia nervosa, bulimia nervosa, and binge eating disorder. We will explore the etiology (i.e., biological and environmental factors), symptom presentation, and empirically supported treatments across these EDs. Additional topics will include cultural considerations, gender and EDs, medical complications, impact of media/social media, and novel directions and treatments for these disorders.

Class Notes: The instructor is Rebecca Shingleton, rshingleton@gmail.com

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 the equivalent of introductory psychology (e.g. Psych AP=5 or IB =7 or Psyc S-1) and one of PSY 18, PSY 1861 or Psyc S-1240 before enrolling in this course; or permission of instructor.

Psychology 1005: Health: A Positive Psychology Perspective

Ellen Langer

Fall; TTh 10:30-11:45

Consent Required: Instructor

Why does it seem that some people are so resilient and content? This course looks at psychological and physical

health from the perspective of Positive Psychology. The major focus will be on mindfulness theory and its relationship to stress/coping; illness/wellness; decision-making; and placebos. The medical model, the biosocial model, and a unified mind-body model will be compared to examine their role in becoming mindful and thus healthier, happier and less stressed.

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych AP=5 or IB =7 or Psyc S-1) and at least one foundational course from PSY 14, PSY 15, PSY 16, PSY 18 or Science of Living Systems 15 before enrolling in this course; or permission of instructor.

Psychology 1201: Your Brain on Drugs:

Psychopharmacology

Scott Lukas

Fall; WF 12-1:15

Consent Required: Instructor

An introduction to how drugs affect mood, sensation, consciousness, and other psychological and behavioral functions in both healthy and disease states. Introduces concepts in neuroscience and pharmacology to understand how drugs are used to treat drug abuse, psychiatric disorders and why individuals use recreational drugs. Covers all CNS drugs, including antidepressants, antipsychotics, alcohol, and both licit and illicit drugs of abuse. Debates controversial topics such as research with psychiatric populations, diagnosing ADHD, teenage suicide, marijuana legalization, and needle exchange programs.

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych AP=5 or IB =7 or Psyc S-1) and at least one foundational course from PSY 14, PSY 18, MCB 80, MCB 81 or Psyc S-1240 before enrolling in this course; or permission of instructor.

Psychology 1861: Developmental Psychopathology

John Weisz

Spring; TBA

An overview of psychological problems and mental disorders in childhood and adolescence. Topics include internalizing conditions (e.g., anxiety, depression), externalizing conditions (e.g., conduct disorder and ADHD), eating disorders, autism, and child responses to maltreatment and other forms of trauma. Theoretical perspectives, diagnostic criteria, etiology, and treatment approaches are examined.

Recommended Prep: The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych

AP=5 or IB =7 or Psyc S-1), or permission of instructor, before enrolling in this course.

Stem Cell and Regenerative Biology 150: Human Genetics: Mining Our Genomes for an Understanding of Human Variation and Disease

Kevin Eggan

Spring; T 9-11:45

The sequencing of the human genome has revealed the full extent of genetic variation that exists within us as a species. This genetic diversity underlies much of our physical variation as well as our differences in responsiveness to disease stimuli and their treatments. We will explore these and other ramifications of human genetic diversity by applying classical and contemporary genetic tools to the identification of specific genes and pathways that functionally underlie our variable biology.

Recommended Prep: Life and Physical Sciences A or Life Sciences 1a; Life Sciences 1b (or equivalent); SCRB 10 or MCB 52. Not expected to be offered in 2014-2015.

Stem Cell and Regenerative Biology 167: Stem Cell Therapeutics: Exploring the Science and the Patient Experience

Leonard Zon

Spring; W 9-11:30

Consent Required: Instructor

Stem cells are the basis for tissue maintenance and repair, thus, are essential elements of normal organ and tissue physiology. Stem cells are also targets for disease processes and through transplantation are important therapeutic agents. This course will allow advanced undergraduates to explore how stem cells and tissue regeneration impact human disease pathogenesis and how stem cells might be exploited to advance new therapies for disease.

Recommended Prep: Life and Physical Sciences A or Life Sciences 1a; Life Sciences 1b; SCRB 10; MCB 52 or MCB 54.

Stem Cell and Regenerative Biology 190: Understanding Aging: Degeneration, Regeneration, and the Scientific Search for the Fountain of Youth

Amy Wagers

Spring; MW 12-1:15

This lecture and discussion course will explore the fundamental molecular and cellular mechanisms that govern organismal aging and contemporary strategies to delay or reverse this process.

Recommended Prep: Life and Physical Sciences A or Life Sciences 1a; Life Sciences 1b; SCRB 10 or MCB 54.

Stem Cell and Regenerative Biology 192: Principles of Drug Discovery and Development

Gregory Verdine

Spring; MW 9-10:15

Class Capacity: 40

Consent Required: Instructor

This interdisciplinary course will examine the process of drug discovery and development through disease-driven examples. Topics include: the efficacy/toxicity balance, the differences between drugs and inhibitors, and the translation of cellular biochemistry to useful medicine

Course Notes: May not be taken concurrently with Chemistry 192. May not be taken for credit if Chemistry 192 or MCB 192 have already been taken.

Recommended Prep: Chemistry 20/30 or 17/27, Life Sciences 52 or their equivalents, MCB 52, and one year of organic chemistry. MCB 54 is recommended.

Stem Cell and Regenerative Biology 195: The Translational Science of Stem Cells

Lee Rubin

Fall; MW 3-4:15

Class Capacity: 16

Consent Required: Instructor

Through a series of lectures and assigned papers, students will be introduced to a broad view of the ways in which stem cells can be used for translational research. This will include human disease modeling, identifying drugs that target endogenous stem cells, or otherwise promote tissue repair, and regenerative medicine (cell-based therapies). This year, the central module of the course and the focus of student projects will be regenerative medicine.

Course Notes: Permission of the instructor required to enroll. Ability to work in a less structured environment will be essential.

Recommended Prep: Life Sciences 1a or Life and Physical Sciences A, Life Sciences 1b, SCRB 10, SCRB 20 or equivalent.

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