Guide to the Focus in Medicine and Society
For History and Science Concentrators
Science and Society Track
For AY 2023-2024

The Medicine and Society focus in the Science and Society track offers opportunities for study that are both more interdisciplinary and more focused than those available to students doing a conventional plan of study in our concentration. It is designed for students considering a career in medicine, health sciences, health policy, or who otherwise have a pronounced interest in the medical sciences. It allows students to combine course work in many of the scientific subjects required for medical school admission with a coherent program of courses that look at health and medicine from a range of historical, social, scientific, and humanistic perspectives.

To graduate with this focus in History and Science, students need to take two semesters of tutorial: History of Science 97 (Sophomore Tutorial) and History of Science 98 (Junior Tutorial). History of Science 99ab (two semesters of Senior Tutorial) is optional but required to be eligible for all levels of department honors. Students may also opt to do a non-thesis honors option, which requires that students take a graduate-level (2000-level) course in the department and maintain a high concentration gpa. History of Science 100 (Knowing the World: An Introduction to the History of Science) is a required course for all concentrators.

Students also need to take four courses in medical sciences (normally courses that also count for pre-medical requirements); no more than two courses may be introductory (introductory courses are normally defined as courses without a prerequisite); courses should be relevant courses in Chemistry, Human Evolutionary Biology, Life Sciences, Mathematics, Molecular and Cellular Biology, Neurobiology, Organismic and Evolutionary Biology, Physical Sciences, or Stem Cell and Regenerative Biology.

Students will also take five additional courses; at least two must be in the history of medicine or its allied fields (including the life sciences, mind sciences, bioethics, biotechnology) and be taught by members of the Department of the History of Science; two will normally (but need not) be drawn from other disciplines concerned with the social, ethical or humanistic analysis of medicine and health (eg., anthropology, economics, ethics, sociology); and one can be an open-ended elective that can be fulfilled by taking any of the History of Science department course offerings.

Required Courses:

- History of Science 97, Tutorial, Sophomore Year.
- History of Science 98, Tutorial, Junior Year.
- History of Science 100: Introduction to the History of Science
- Four courses in medical sciences (normally courses that also count for pre-medical requirements)
- Five additional courses in the history of medicine and allied fields (see above)

Optional Courses:

- History of Science 99ab, Tutorial, Senior Year (the senior thesis--two semesters). Normally, the thesis will address some historical question about medicine and health, broadly understood. The senior thesis is optional, but is required for full honors eligibility.

The list of courses on the following pages outlines many of the courses that can be used to fulfill the requirements for the Focus in Medicine and Society, but it is not exhaustive or definitive and does not necessarily include all relevant courses. Students may petition to have other relevant courses in the history of medicine count for concentration credit by contacting Allie Belser, Manager of Student Programs.

1. History of Science Tutorials

- History of Science 97, Tutorial, Sophomore Year (required; offered during the spring semester)
- History of Science 98, Tutorial, Junior Year (required; normally taken during the fall semester)
- History of Science 99ab, Tutorial, Senior Year (optional; the senior thesis--two semesters; normally, the thesis will address some historical question about medicine and health, broadly understood)

2. History of Science 100

All concentrators will be required to enroll in History of Science 100, Knowing the World: An Introduction to the History of Science, which is offered only during the fall semester. We encourage students to take this course prior to their senior year, and ideally in their first or second year.

3. History of Medicine and Allied Fields

Course requirements: four courses; no more than two may be introductory (normally defined as courses without a prerequisite); at least two must be in the history of medicine or its allied fields (including the life sciences, mind sciences, bioethics, biotechnology) and be taught by members of the Department of the History of Science; and two will normally (but need not) be drawn from other disciplines concerned with the social, ethical or humanistic analysis of medicine and health (anthropology, economics, ethics, sociology).

A. At least two courses concerned with medicine and health, taught by faculty from the Department of the History of Science, chosen from among the following (including *cross-listed courses):

*Anthropology 1822. Environment, Health, and Justice
*Classical Studies 165. Medicine in the Greco-Roman World
*East Asian Studies 170. Medicine and the Self in China and in the West
*Folklore and Mythology 168. Magic and Faith in Medieval Medicine
*General Education 1004. The Darwinian Revolution
*General Education 1089. The Border: Race, Politics, and Health in Modern Mexico
*General Education 1093. Who Lives, Who Dies, Who Cares? Reimagining Global Health
*General Education 1116. Medical Ethics and History
*General Education 1127. Gender and Science
*General Education 1170. Confronting COVID-19: Science, History, Policy
*General Education 1175. Vaccines: History, Science, Policy
*General Education 1179. Psychotherapy and the Modern Self
*History 15U. The Means of Reproduction: Health, Bodies, Technologies
*History and Literature 90SF. HIV in Global Perspective
History of Science 1180. Hunger's Long History: Need, Desire, and Science in the Early Modern World
History of Science 1420. A History of Medicine Through Patient Voices
History of Science 1430. Diagnostic Technologies in Medicine: From the Stethoscope to Artificial Intelligence
History of Science 1435. A History of Biotechnology
History of Science 1441. Foreign Bodies: On Health and Migration

History of Science 1445. Medicine and Health in America
History of Science 1458. Sick and Tired of Being Sick and Tired: A History of Health Disparities in America
History of Science 1460. From Colonial to Global Health
History of Science 1461. Historical Perspectives on Global Health
History of Science 1471. War and Medicine
History of Science 1472. Mental Health in Crisis: From War Neurosis to Covid-19
History of Science 1480. Food, Science, and the Invention of Global Hunger
History of Science 1685. Race, War, and Medicine
History of Science 1735. Being Human since 1945
History of Science 1770. Broken Brains: A Patient-Centered History
History of Science 1780. Psychopathologies of Modern Life
History of Science 1910. Prison Science
*Anthropology 2797. Theory and Practice of Social Medicine
History of Science 212. Death in the Age of Plague
History of Science 240. Air Pollution: A Global History
History of Science 242. Global Perspectives on the History of Medicine
History of Science 247. Current Issues in the History of Medicine: Seminar
History of Science 249. Historical Perspectives on the Opioid Epidemic
History of Science 2428. Epidemics and Other Crises
History of Science 2445. The Changing Concept of Race in America: From Jefferson to Genomics
History of Science 2480. Food, Science, and the Invention of Global Hunger
History of Science 2739. Freud and His Legacies: Readings in the History of Psychoanalysis
History of Science 2953. Bioethics, Law, and the Life Sciences

B. Two courses can be taken in a field concerned with the social, ethical, or humanistic analysis of medicine and health, chosen, normally, from among the following (students may choose to fulfill this area by taking additional courses listed in Part A):

Anthropology
Anthropology 1698. Anthropology of Death and Immortality
Anthropology 1906. Care in Critical Times
Anthropology 2796. The Opioid Epidemic in the United States: From Abandonment to Accompaniment
African and African American Studies 189x. Medicine, Science, and Empire

Economics
Economics 1389. Economics of Global Health
Economics 1460. Economics of Health Care Policy
Economics 2022. Health, Well-Being, and Justice
Economics 2465. Health Economics

Global Health and Health Policy
Global Health and Health Policy 20. Maternal & Reproductive Health and Health Policy
Global Health and Health Policy 50. The Quality of Health Care in America
Global Health and Health Policy 70. Global Response to Disasters and Refugee Crises
Global Health and Health Policy 99. Research in Global Health and Health Policy

Sociology
Sociology 1046. Life and Death by Design
Sociology 1110. Public Health and Environmental Injustice
African and African American Studies 197. Poverty, Race, and Health

C. One can be an open-ended elective that can be fulfilled by taking any of the History of Science department course offerings.

4. Medical Sciences Area

Course requirements: four courses in medical sciences, selected from one or more or the following fields; no more than two may be introductory (which is normally defined as a course without a prerequisite--courses with an asterisk count as introductory). This list is not necessarily current or complete. (Please check the Pre-Medical Information for Harvard Students bluebook for the most accurate information on course requirements for Medical Schools).

Common Medical Sciences Sequences of Courses in Chemistry:

***Life Sciences 1a.** An Integrated Introduction to the Life Sciences: Chemistry, Molecular Biology, and Cell Biology
Physical Sciences 11. Foundations and Frontiers of Modern Chemistry: A Molecular and Global Perspective
Chemistry 17. Principles of Organic Chemistry
Chemistry 27. Organic Chemistry of Life

Or

***Life Sciences 1a.** An Integrated Introduction to the Life Sciences: Chemistry, Molecular Biology, and Cell Biology
Physical Sciences 11. Foundations and Frontiers of Modern Chemistry: A Molecular and Global Perspective
Chemistry 20. Organic Chemistry
Chemistry 30. Organic Chemistry

The general chemistry requirement for medical students can be satisfied with any two of the following courses: Life and Physical Sciences A, Life Sciences 1a, Physical Sciences 1, Physical Sciences 10, or Physical Sciences 11.

Chemistry 17/27 or Chemistry 20/30 satisfy the organic chemistry requirement for medical school. The Chemistry 17/27 sequence is intended primarily for students interested in the Life Sciences, and the Chemistry 20/30 sequence is intended primarily for students interested in Chemistry and the Physical Sciences.

Other sequences can include:
Chemistry and Chemical Biology Department Courses numbered 100 and above
*Life and Physical Sciences A. Foundational Chemistry and Biology
*Life Sciences 1b. An Integrated Introduction to the Life Sciences: Genetics, Genomics, and Evolution
Physical Sciences 2. Mechanics, Elasticity, Fluids, and Diffusion
Physical Sciences 3. Electromagnetism, Waves, Imaging, and Information
Chemistry 20. Organic Chemistry
Chemistry 30. Organic Chemistry
Chemistry 40. Inorganic Chemistry
Chemistry 60. Foundations of Physical Chemistry

Human Evolutionary Biology
HEB Courses numbered 1200 and above

*Life and Physical Sciences A. Foundational Chemistry and Biology
*Life Sciences 1b. An Integrated Introduction to the Life Sciences: Genetics, Genomics, and Evolution
Life Sciences 2. Evolutionary Human Physiology and Anatomy
*OEB 10. Foundations of Biological Diversity

Life Sciences

*Life and Physical Sciences A. Foundational Chemistry and Biology
*Life Sciences 1a. An Integrated Introduction to the Life Sciences: Chemistry, Molecular Biology, and Cell Biology
*Life Sciences 1b. An Integrated Introduction to the Life Sciences: Genetics, Genomics, and Evolution
Life Sciences 2. Evolutionary Human Physiology and Anatomy
Life Sciences 50ab. Integrated Science
Life Sciences 100. Experimental Research in the Life Sciences
Life Sciences 120. Global Health Threats
SCRB 60. Ethics, Biotechnology, and the Future of Human Nature

Mathematics

Applied Mathematics Department courses numbered 100 and above
Mathematics Department courses numbered 100 and above
Statistics Department courses numbered 110 and above
*Mathematics Ma. Introduction to Functions and Calculus I
*Mathematics Mb. Introduction to Functions and Calculus II
*Mathematics 1a. Introduction to Calculus
Mathematics 1b. Calculus, Series, and Differential Equations
Mathematics 18. Multivariable Calculus for Social Sciences
Mathematics 19a. Modeling and Differential Equations for the Life Sciences
Mathematics 19b. Linear Algebra, Probability, and Statistics for the Life Sciences
Mathematics 21a. Multivariable Calculus
Mathematics 21b. Linear Algebra and Differential Equations
Mathematics 23a. Linear Algebra and Real Analysis I
Mathematics 23b. Linear Algebra and Real Analysis II
Mathematics 25a. Honors Linear Algebra and Real Analysis I
Mathematics 25b. Honors Linear Algebra and Real Analysis II
Mathematics 55a. Honors Abstract Algebra
Mathematics 55b. Honors Real and Complex Analysis
Applied Mathematics 21a. Mathematical Methods in the Sciences
Applied Mathematics 21b. Mathematical Methods in the Sciences
*Statistics 100. Introduction to Quantitative Methods for the Social Sciences and Humanities
*Statistics 101. Introduction to Quantitative Methods for Psychology and the Behavioral Sciences
*Statistics 102. Introduction to Statistics for Life Sciences
*Statistics 104. Introduction to Quantitative Methods for Economics

Molecular and Cellular Biology

Molecular and Cellular Biology Department courses numbered 100 and above
*Life Sciences 1a. An Integrated Introduction to the Life Sciences: Chemistry, Molecular Biology, and Cell Biology
*Life Sciences 1b. An Integrated Introduction to the Life Sciences: Genetics, Genomics, and Evolution
MCB 60. Cellular Biology and Molecular Medicine
MCB 63. Biochemistry and Molecular Medicine
MCB 64. The Cell Biology of Human Life in the World
MCB 65. Physical Biochemistry: Understanding Macromolecular Machines

MCB 68. Cell Biology Through the Microscope
*MCB 80. Neurobiology of Behavior
*MCB 81. Fundamentals of Neuroscience
Life Sciences 100r. Experimental Research in the Life Sciences
Life Sciences 120. Global Health Threats
Applied Mathematics 126. Statistics and Inference in Biology
Mathematics 153. Mathematical Biology-Evolutionary Dynamics
Physics 141. The Physics of Sensory Systems in Biology
SCRB 192. Principles of Drug Discovery and Development

Neurobiology

Neurobiology Department courses numbered 100 and above

*Life Sciences 1a. An Integrated Introduction to the Life Sciences: Chemistry, Molecular Biology, and Cell Biology
*Life Sciences 1b. An Integrated Introduction to the Life Sciences: Genetics, Genomics, and Evolution
*MCB 80. Neurobiology of Behavior
*MCB 81. Fundamentals of Neuroscience
Neurobiology 101. Auditory Neurobiology
BCMP 213. Behavioral Pharmacology
Life Sciences 100. Experimental Research in the Life Sciences
MCB 105. Systems Neuroscience
MCB 115. Cellular Basis of Neuronal Function
MCB 125. Molecular Basis of Behavior
MCB 129. The Brain: Development, Plasticity and Decline
MCB 145. Neurobiology of Perception and Decision Making
MCB 146. Experience-Based Brain Development: Causes and Consequences
MCB 148. The Neurobiology of Pain
MCB 170. Brain Invaders: Building and Breaking Barriers in the Nervous System
MCB 186. Circadian Biology: From Cellular Oscillators to Sleep Regulation
OEB 57. Animal Behavior
OEB 105. Neurobiology of Motor Control
OEB 223. Topics in Neurogenetics
Physics 141. The Physics of Sensory Systems in Biology
Psychology 1052. The Application of fMRI in Cognitive Neuroscience Research
Psychology 1201. Your Brain on Drugs: Psychopharmacology
Psychology 1304. Brain Damage as a Window into the Mind: Cognitive Neuropsychology
Psychology 1430. Human Memory and Amnesia
Psychology 1452. The Human Face
SCRB 180. Regeneration and Repair in the Mammalian Brain
SCRB 182. Got (New) Brain? The Evolution of Brain Regeneration

Organismic and Evolutionary Biology

Oganismic and Evolutionary Biology Department courses numbered 100 and above

*OEB 10. Foundations of Biological Diversity
OEB 50. Genetics and Genomics
OEB 51. Biology and Evolution of Invertebrate Animals
OEB 52. Biology of Plants
OEB 53. Evolutionary Biology
OEB 54. Biology of the Fungi
OEB 55. Ecology: Populations, Communities, and Ecosystems

OEB 56. Geobiology and the History of Life
OEB 57. Animal Behavior
OEB 59. Plants and Human Affairs

Physics

Physics Department Courses numbered 100 and above

Physical Sciences 2. Mechanics, Elasticity, Fluids, and Diffusion
Physical Sciences 3. Electromagnetism, Waves, Imaging, and Information
Physical Sciences 11**.** Foundations and Frontiers of Modern Chemistry: A Molecular and Global Perspective
Physical Sciences 12a. Mechanics from an Analytic, Numerical, and Experimental Perspective
*Physics 15a. Introductory Mechanics and Relativity
*Physics 15b. Introductory Electromagnetism
Physics 15c. Wave Phenomena
Physics 16. Mechanics and Special Relativity
Applied Physics 50a. Physics as a Foundation for Science and Engineering, Part I
Applied Physics 50b. Physics as a Foundation for Science and Engineering, Part II
Applied Physics 195. Introduction to Solid State Physics
Astronomy 191. Astrophysics Laboratory
Chemistry 160. The Quantum World
Chemistry 161. Statistical Thermodynamics
Chemistry 163. Frontiers in Biophysics
Chemistry 165. Experimental Physical Chemistry
Earth and Planetary Sciences 131. Introduction to Physical Oceanography and Climate
Engineering Sciences 120. Introduction to the Mechanics of Solids
Engineering Sciences 123. Introduction to Fluid Mechanics and Transport Processes
Engineering Sciences 154. Electronic Devices and Circuits
Engineering Sciences 173. Electronic and Photonic Devices
Engineering Sciences 181. Engineering Thermodynamics
Engineering Sciences 190. Introduction to Materials Science and Engineering

Stem Cell and Regenerative Biology

Stem Cell and Regenerative Biology Department courses numbered 100 and above

SCRB 10. Human Developmental and Regenerative Biology
SCRB 20. Molecular Genetics and Genomics in Development and Disease
SCRB 25. Biochemistry and Human Metabolism
SCRB 60. Ethics, Biotechnology, and the Future of Human Nature
SCRB 91r. Introduction to Research
Biomedical Engineering 110. Physiological Systems Analysis
Biomedical Engineering 121. Cellular Engineering
Biomedical Engineering 125. Tissue Engineering
Biomedical Engineering 130. Neural Control of Movement
Biomedical Engineering 153. Bioelectromagnetics
Biomedical Engineering 160. Chemical Kinetics and Reactor Design
Biomedical Engineering 191. Introduction to Biomaterials
Engineering Sciences 53. Quantitative Physiology as a Basis for Bioengineering