

**Guide to the Focus in Medicine and Society**  
**For History and Science Concentrators**  
**Science and Society Track**  
**Honors Eligible**  
**2018-2019**

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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 four semesters of tutorial: History of Science 97 (Sophomore Tutorial), History of Science 98 (Junior Tutorial) and History of Science 99ab (two semesters of Senior Tutorial). History of Science 100 (Knowing the World: An Introduction to the History of Science) is a required course.

Students also need to take four half-courses in medical sciences; no more than two half-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 half-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 be drawn from other disciplines concerned with the social, ethical or humanistic analysis of medicine and health (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 99ab, Tutorial, Senior Year (the senior thesis--two semesters). Normally, the thesis will address some historical question about medicine and health, broadly understood.
- History of Science 100: Introduction to the History of Science
- Four half-courses in medical sciences (normally courses that also count for pre-medical requirements)
- Five additional half-courses (see above)

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 does not necessarily include all of the 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 (offered during the spring semester)
- History of Science 98, Tutorial, Junior Year (normally taken during the fall semester)
- 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)

## 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.

## 3. History of Medicine and Allied Fields

Course requirements: four half-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 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 its allied fields, taught by faculty from the Department of the History of Science, chosen from among the following:**

Culture and Belief 11. Medicine and the Body in East Asia and in Europe  
Culture and Belief 34. Madness and Medicine: Themes in the History of Psychiatry  
Culture and Belief 47. The Darwinian Revolution  
Culture and Belief 58. Case Studies in the Medical Humanities: Interdisciplinary Perspectives on the Experience of Illness  
Ethical Reasoning 33. Medical Ethics and History  
Classical Studies 165. Medicine in the Greco-Roman World  
History of Science 108. Bodies, Sexualities, and Medicine in the Medieval Middle East  
History of Science 136. History of Biotechnology  
History of Science 139v. Ecological Visions of Health and Disease  
History of Science 140. Public Health on the Border: Race, Politics, and Health in Modern Mexico  
History of Science 144. Medical Technologies in Historical Perspective  
History of Science 146. (How) Does Medicine Work?  
History of Science 146v. Bodies in Flux: Medicine, Gender, and Sexuality in the Modern Middle East  
History of Science 147. The Changing Concept of Race in America: From Jefferson to Genomics  
History of Science 147v. Graphic! Visualizing Medicine from Textbooks to Comics  
History of Science 149. The History and Culture of Stigma  
History of Science 151v. A History of Global Health and/in Latin America  
History of Science 170. Broken Brains  
History of Science 171v. Measuring the Mind: How Psychological Tests Are Used to Sort Americans and Why It Matters  
History of Science 174. Critical Experiments in the Human Sciences  
History of Science 175v. Traumatic Histories  
History of Science 176. Brainwashing and Modern Techniques of Mind Control  
History of Science 176v. Mind and Matter: Themes in the History of Neuroscience  
History of Science 177v. The Sciences of Memory, Lies, and Pain  
History of Science 178. History of the Psychotherapies  
History of Science 179. The Freudian Century

History of Science 212. Death in the Age of Plague  
History of Science 242. Global Perspectives on the History of Medicine  
History of Science 246. History and Anthropology of Medicine and Biology  
History of Science 245. The Changing Concept of Race in America: From Jefferson to Genomics  
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 248. Ethics and Judgment in the History of Science and Medicine  
History of Science 253. Bioethics, Law, and the Life Sciences

**b. Two half-courses will normally be taken in a field concerned with the social, ethical or humanistic analysis of medicine and health, chosen from among the following:**

**Anthropology**

Anthropology 2796. Medical Anthropology: Advanced Topics  
African and African American Studies 189x. Medicine, Culture, and Society

**Economics**

Economics 1389. Economics of Global Health  
Economics 1460. Economics of Health Care Policy  
Economics 2460. Health Economics Workshop  
Economics 2465. Health Economics  
Empirical and Mathematical Reasoning 20. The Business and Politics of Health

**Global Health and Health Policy**

Global Health and Health Policy 50. The Quality of Health Care in America  
Global Health and Health Policy 99. Research in Global Health and Health Policy  
Empirical and Mathematical Reasoning 20. The Business and Politics of Health  
Science of Living Systems 16. Human Evolution and Human Health  
Science of Living Systems 19. Nutrition and Global Health  
Societies of the World 24. Global Health Challenges: Complexities of Evidence-Based Policy  
Societies of the World 25. Case Studies in Global Health: Biosocial Perspectives  
United States in the World 11. U.S. Health Care Policy  
United States in the World 31. American Society and Public Policy

**Ethics**

Ethical Reasoning 24. Bioethics  
Ethical Reasoning 33. Medical Ethics and History  
SCRB 60. Ethics, Biotechnology, and the Future of Human Nature

**Sociology**

Sociology 146. Death by Design: Health Inequalities in Global Perspective  
Sociology 165. Inequalities in Health Care  
Sociology 168. Sociology of Biomedicine and Global Health  
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 half-courses in medical sciences, selected from one or more of 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.

##### **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 1.** Chemical Bonding, Energy, and Reactivity: An Introduction to the Physical Sciences

**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 1.** Chemical Bonding, Energy, and Reactivity: An Introduction to the Physical Sciences

**Chemistry 20.** Organic Chemistry

**Chemistry 30.** Organic Chemistry

Life Sciences 1a and Physical Sciences 1 together satisfy the one year general chemistry requirement for medical school; 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  
\*Science of Living Systems 11. Molecules of Life  
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**

### **Organismic 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 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