PROGRAM IN HUMAN BIOLOGY

Emeriti: (Professors) Clifford Barnett (Anthropological Sciences), Paul Bascom (Education), Luigi Cavalli-Sforza (Genetics), Carl Djerassi (Chemistry), Sanford Dornbusch (Sociology), Albert H. Hastorf (Psychology), Herant Katchadourian (Human Biology), Donald Kennedy (Biological Sciences)
Director: Jeffrey Wine
Associate Director: Shirley Feldman
Professors: Dennis Carter (Mechanical Engineering), William H. Durham (Anthropological Sciences), Marcus Feldman (Biological Sciences), Russell Fernald (Psychology), James Ferrell (Molecular Pharmacology), Larry Goulder (Economics), H. Craig Heller (Biological Sciences), Richard Klein (Anthropological Sciences), Timothy Lenoir (History), Michael Marmor (Ophthalmology), Gordon Matheson (Medicine), Daria Mochly-Rosen (Molecular Pharmacology), Robert Sapolsky (Biological Sciences), Stephen H. Schneider (Biological Sciences), Arthur B. Wolf (Anthropological Sciences)
Associate Professors: Anne Fernald (Psychology), James Fox (Anthropological Sciences), John Gabrieli (Psychology), Peter Godfrey-Smith (Philosophy), Robert Reich (Political Science), John Rick (Anthropological Sciences)
Assistant Professors: Melissa Brown (Anthropological Sciences), Joanna Mountain (Anthropological Sciences), Ewen Wang (Emergency Medicine)
Professors (Teaching): Ellen Porzig (Developmental Biology, Molecular Pharmacology)
Associate Professor (Teaching): Donald Barr (Sociology, Human Biology), Carol Boggs (Biological Sciences) Robert Siegel (Microbiology and Immunology)
Visiting Associate Professor: Catherine Heaney
Other Teaching Faculty and Staff: William Abrams, Nancy Brown, Judy Chu, Christopher Gardner, Shirley Feldman, Anne Firth-Murray, Anne Friedlander, Geoffrey Heller, Renu Heller, William B. Hurlbut, Dominique Irvine (Anthropological Sciences), Alan Launer, Philip Lee, Armin Rosencranz, Lynn Rothschild, Merritt Ruhlen (Anthropological Sciences), Darvin Scott Smith, Stan Wanat, Larry Zaroff
Student Advisers: Iman Ahmad, Manisha Bahl, Sundeep Bhat, Laura Fowler, Puja Kohli, Christina Williams

Program Offices: Building 80
Mail Code: 94305-2160
Phone: (650) 725-0336
Email: cacciari@stanford.edu (Student Services)
Web Site: http://www.stanford.edu/dept/humbio/

Courses given in Program in Human Biology have the subject code HUMBIO. For a complete list of subject codes, see Appendix B.

The Program in Human Biology is an interschool, interdepartmental, undergraduate major. It provides an interdisciplinary perspective on the relationship between the biological and social aspects of humanity's origin, development, and prospects.

The program has three goals:

1. To provide a broad and rigorous introduction to the biological and behavioral sciences and their interrelationships.
2. To relate these sciences to the problems raised by the relationships of human beings to one another and to their environment.
3. To help each student achieve a high level of understanding by focusing on one aspect of the biological and behavioral sciences, and its application.

The Human Biology curriculum draws on faculty from diverse University departments and schools. To complete the requirements for the major, students must take courses from the offerings of the program and from the listings of other University departments. The program culminates in a B.A. in Human Biology.

Human Biology majors are well prepared for advanced training in professional schools (for example, Education, Law, Medicine, Public Policy) and graduate programs in the behavioral, natural, and social sciences, depending on their choice of upper-division courses. Undergraduates in Human Biology often enter coterminal master's degree programs in a number of other University departments.

Additional information about the major may be obtained from the program's offices or the web site at http://www.stanford.edu/dept/humbio.

UNDERGRADUATE PROGRAMS

BACHELOR OF ARTS

The B.A. in Human Biology (HUMBIO) requires a minimum of 84 units in the major divided between four levels of courses:

1. *Fundamental Program:* at least 38 units, to include
   Human Biology Core (30 units)
   Statistics (4-5 units)
   Internship (HUMBIO 197; 4 units)
   The Human Biology Core refers to HUMBIO 2A and 2B, 3A and 3B, and 4A and 4B. See "Required Courses" below for more information.
   HUMBIO 4B fulfills the policy requirement of the major. Other courses which satisfy the policy requirement may be obtained from the program office. A course used to fulfill the program's policy requirement may not be used in the student's foundation or area of concentration or as one of the three required upper-division courses.
   Statistics may be selected from: STATS 60 or 141, PSYCH 10, ECON 102A, EDUC 160, or BIOSCI 141.
   The core and a statistics course must be taken for a grade by majors.
   The internship requirement, an independent field experience project, is graded satisfactory/no credit only.
2. *Foundation Courses:* 20-unit minimum. Total units vary, depending on the focus of study selected by the student for the area of concentration. They may include practicums, labs, and introductory-level courses from across the University. A maximum of 10 premed units (from the chemistry, physics, and calculus series, and biology lab courses) and 4 research units are allowed.
3. *Area of Concentration:* a minimum of five courses totaling at least 20 units. This in-depth area of study enables the student to focus on educational and post-baccalaureate goals. Courses must be numbered 100 or above. Three or more departments must be represented in the concentration. Each course must be taken for a minimum of 3 units. Final approval of the concentration rests with the student advisers and faculty adviser. All area of concentration courses must be taken for a grade. Examples of numerous possible areas of concentration are available in the Human Biology Student Handbook.
4. *Upper-Division Courses:* students must take three Human Biology upper-division courses numbered 100 to 189. Students are expected to enroll in courses outside of the area of concentration for breadth. Lab courses cannot be used to fulfill the upper-division requirement. One upper-division course may be taken satisfactory/no credit. Each course must be taken for a minimum of 3 units. All non-laboratory advanced courses (those numbered 100 to 189) fulfill the Human Biology upper-division requirement, including those that say "enroll in" another department.

A prospective major must consult with the student and faculty advisers to obtain detailed information about the program and guidance in the development of an individual course of study. At the time the major is declared, the student must submit a brief written statement of academic and long-term goals and a proposed roster of courses satisfying the requirements for the major. The proposal is reviewed by the student advisers who then help identify an appropriate faculty adviser. Final approval of the proposed course of study rests with the faculty adviser. There are three specialized upper-division tracks offered within the program: Health Policy, Human Health and Performance, and Environmental Policy. Students with interests in these programs should contact the appropriate coordinator.

Students who plan to pursue graduate work should be aware of the admission requirements of the schools to which they intend to apply. Early planning is advisable to guarantee completion of major and graduate school requirements.

MINORS

A minor in Human Biology provides an introductory background to the relationship between the biological and social aspects of humanity's origin, development, and prospects. Many of the major problems facing human civilization today involve both biological and social aspects. Scientific approaches to these problems are essential, but they must be broadly conceived, integrating what we know of the biological with an understanding of the social and cultural setting in which they exist. Students with a minor in Human Biology will have a strong background in the integration between the biological and social aspects of humans.

To minor in Human Biology, students must take the core curriculum (HUMBIO 2A, 2B, 3A, 3B, 4A, and 4B) and one additional upper-division course (for example, any course offering by Human Biology with a number over 100, including courses cross-listed with other departments or programs). These must be taken for a minimum letter grade of 'C-'. Courses that count towards the fulfillment of major requirements may not be counted towards the minor.

Students declaring a minor in Human Biology must do so no later than two quarters prior to their intended quarter of degree conferral (for example, a student must declare a minor before the end of the Autumn Quarter to graduate the following Spring Quarter).

HONORS PROGRAM

The honors program in Human Biology affords qualified majors the opportunity to work closely with faculty on an individual research project, culminating in an honors thesis. Students may begin honors research from a number of starting points including: topics introduced in the core or upper-division courses; independent interests stemming from an internship experience; or collaborating with faculty from the natural, social, or behavioral sciences. Students may apply to the honors program once they have completed the Human Biology core, have an overall Stanford grade point average (GPA) of 3.0, and meet other requirements detailed in the honors handbook. Interested students should consult resources in the Human Biology office including the Human Biology Honors Handbook, the honors program application available from the student services office, and appointments during office hours with the Human Biology honors chair.

Specific courses of interest to honors students include: HUMBIO 190, Introduction to Honors in Human Biology, HUMBIO 160B, Senior Honors Colloquium in Social and Policy Research, HUMBIO 193, Research in Human Biology, and HUMBIO 194, Honors. Most honors projects involve a total of 10 to 15 units of course work in HUMBIO 193 and 194.

Admission to the honors program is by application, normally between mid-April of the junior year and mid-October of the senior year. Students planning to conduct honors research are encouraged to begin research or preparation during their junior year. An Honors College is held for a select number of senior honor students just prior to Autumn Quarter each year. For applications, contact the program office. The honors thesis is normally completed by the middle of Spring Quarter of the senior year. Each honors student then presents a brief summary of honors research at the Human Biology Honors Symposium in May.

STOREY HOUSE

Storey House, 544 Lasuen Mall, is an undergraduate residence for the Human Biology Academic Theme House, devoted to developing an intellectual community among Human Biology majors at Stanford, and allowing faculty and students to become acquainted and share their Human Biology interests and research. Its goals are to foster intellectual discussion in the residential lives of the students living in Storey House, mentoring relationships between upperclassmen and core students in the house, and stimulating events for all Human Biology majors. Assignment is made through the regular undergraduate housing draw.

COURSES

(WIM) indicates that the course satisfies the Writing in the Major requirements. (AU) indicates that the course is subject to the University Activity Unit limitations (8 units maximum).

The faculty and staff of Human Biology prepare a student handbook, on the web at http://www.stanford.edu/dept/humbio/, that provides a detailed description of the Human Biology major and outlines possible areas of concentration. It reflects the most up-to-date information for the academic year and is the definitive guide for all Human Biology majors.

REQUIRED CORE

Required Core sequences (2A and 2B, 3A and 3B, and 4A and 4B) introduce the biological and social sciences, and most importantly, relationships between the two. Classes meet throughout the academic year. Students must register concurrently for the A and B series and take the core in sequence. Students should initiate the core in Autumn Quarter of the sophomore year. Freshmen are not permitted to enroll. Majors must take the core courses for a minimum letter grade of 'C-.'

HUMBIO 2A,B. Genetics, Evolution, and Ecology: Culture, Evolution, and Society

HUMBIO 2A. Genetics, Evolution, and Ecology—Introduction to the basic principles of classical and modern genetics, evolutionary theory, and population biology. Topics: micro- and macro-evolution, population and molecular genetics, population dynamics, and community ecology, emphasizing the genetics of the evolutionary process and applications to human populations. GER:2a

5 units, Aut (Durham, Mountain)

HUMBIO 2B. Culture, Evolution, and Society—Introduction to the evolutionary study of human diversity. Hominid evolution, the origins of social complexity, social theory, and the emergence of the modern world system, emphasizing the concept of culture and its influence on human differences. GER:3b

5 units, Aut (Klein, M. Brown)

HUMBIO 3A,B. Cell Biology and Developmental Biology: Biology and Culture in Human Development

HUMBIO 3A. Cell and Developmental Biology—The basic principles of the biology of cells: the principles of human developmental biology, the biochemistry of energetics and metabolism, the nature of membranes and organelles, hormone action and signal transduction in normal and diseased states (diabetes, cancer, autoimmune diseases), drug discovery, immunology, and drug addiction. GER:2a

5 units, Win (Ferrell)

HUMBIO 3B. The Human Predicament—The relationship of the biological sciences to public policy in resource management and conservation practices, the regulation of environmental and health risks, agricultural production, the delivery of health services, the protection of biodiversity, and global climate change. Assigned policy challenges in lectures and section meetings. Readings on actual cases. GER:3b (WIM)

5 units, Win (Staff)

HUMBIO 4A,B. Cell Biology and Developmental Biology: Biology and Culture in Human Development

HUMBIO 4A. The Human Organism—Organ system physiology, beginning with the basic principles of neurobiology and endocrinology, and the functions of body organs. The mechanisms of control, regulation, and integration of organ systems function. GER:2a

5 units, Spr (R. Fernald, Heller)

HUMBIO 4B. Biology and Culture in Human Development—Introduction to the research and theory on early human development. How psychobiological factors shape the developing child, and how cultural practices shape the environments of childhood and influence human cognitions, emotions, moral judgments, relationships, and social behavior from birth through adolescence. GER:3b

5 units, Spr (A. Fernald)

ADDITIONAL INTRODUCTORY OFFERINGS

HUMBIO 2S,3S,4S. Bioethics—Year-long introductory series (2S,3S,4S) on the social, ethical, philosophical, and religious issues associated with advances in biomedical science. Guest speakers with discussion format. Designed to parallel the Human Biology core sequence, but may be taken independently of the core. Each of series is different and may be taken in any sequence or as single courses. 1 unit S/NC, 2 units with weekly discussion section. See http://www.stanford.edu/class/bioethics.

HUMBIO 2S. Bioethics—Topics: ethics and human origins, the Human Genome project, genetic screening and eugenics, genetic engineering, beauty and disgust as agents of evolution, religion in the age of Darwinism, and evolution and the future of humanity.
1-2 units, Aut (Hurlbut)

HUMBIO 3S. Bioethics—Topics: in vitro fertilization, intrauterine surgery, growth hormone, cosmetic surgery, the nature of desire and sexuality, anorexia nervosa, cloning and human stem cells, natural aging and extending the lifespan.
1-2 units, Win (Hurlbut)

HUMBIO 4S. Bioethics—Topics: terraforming Mars, psychophysiology of space travel, computer mediated surgery, virtual reality, ecology and human disease, global warming, and biowarfare.
1-2 units, Spr (Hurlbut)

HUMBIO 4Y. Practicum in Child Development—Practical experience at Bing Nursery School for 3.5 hours per week. Pre- or corequisite: 4B. (AU)
1 unit, Spr (A. Fernald, Hartman)

HUMBIO 5. The Biology and Evolution of Language—(Enroll in ANTHSCI 5/214.)
4-5 units, Aut (Fox)

HUMBIO 6. Human Origins—(Enroll in ANTHSCI 6/206.)
5 units, Win (Klein)

HUMBIO 10. Human Sexuality—Broad, integrated, multidisciplinary perspective on human sexuality. The biological aspects of sex: anatomy, physiology, endocrinology, pregnancy, contraception, and diseases of the sexual organs. Sexual behavior: its development, patterns, variations, and interpersonal aspects. The relationship of sex and society in historical and cross-cultural contexts. Lecture/panel; no sections. GER:4c
3-4 units (Staff) not given 2003-04

HUMBIO 13. The Emergence of Modern Medicine—(Enroll in HISTORY 13.)
5 units (Findlen) not given 2003-04

HUMBIO 14. Science, Technology, and Art: The Worlds of Leonardo—(Enroll in STS 102, HISTORY 14/314.)
5 units (Findlen) not given 2003-04

HUMBIO 20. Understanding the Drug Development Process—Dialogue with representatives from academia and leading pharmaceutical and biotech companies. From ideas to medical therapies (conception, clinical trials, and marketing of new pharmaceuticals). Topics: academic versus industrial research, clinical trials, FDA approval process, role of biotechnology in drug development, marketing, and business development of drugs. (AU)
1 unit, Spr (Staff)

HUMBIO 27. Traditional Chinese Medicine—The philosophy and history behind traditional Chinese medicine. Concepts such as Qi, Yin/Yang, meridians, Chinese organs, and the 5 elements. How these concepts are applied through techniques such as acupuncture, herbal medicine, Qi gong, and massage. How traditional Chinese medicine is understood from a scientific standpoint. Political and socioeconomic implications. Observation of an acupuncturist. Readings on the integration of Eastern and Western medicine and on traditional Chinese medicine.
1 unit, Spr (Golianu)

HUMBIO 60. Population Studies—(Enroll in BIOSCI 146.)
1 unit, Win (Feldman)

HUMBIO 61. Introduction to Philosophy of Science—(Enroll in PHIL 60, HPS 60.)
5 units, Win (Tanona)

HUMBIO 75S. The Literature of Health Care: Novels and Theater of Illness—The dichotomy between the science of medicine as seen in medical history and the subjectivity of medicine as seen in literature and the arts. Focus is on the subjective side of medicine as illustrated in the novel and the theater. An opportunity to balance science with the other side of health care, the feelings of patients and doctors.
3 units, Spr (Zaroff)

STANFORD INTRODUCTORY SEMINARS

HUMBIO 90Q. Contemporary Issues in Human Experimentation—Stanford Introductory Seminar. Preference to sophomores. The guiding principles currently used to protect human subjects in terms of informed consent and protection of privacy; ethical issues relating to compensatory mechanisms for inherent risks; historical perspective and the development of the current mechanisms to safeguard the privacy and integrity of the individual; examples of use/abuse of human experimentation during medieval, Nazi, and modern times. Guest speakers currently performing human experiments or involved in approving such experimentation.
3 units, Win (Constantinou)

HUMBIO 91Q. Neuroethology: The Neural Control of Behavior—Stanford Introductory Seminar. Preference to sophomores. Animal behavior offers insights about evolutionary adaptations. The origins of the study of animal behavior and its development to the present. Discussion of original research papers. The use and misuse of parallels between animal and human behavior. Possible field trip to observe animals in their natural habitat.
3 units, Aut (R. Fernald)

HUMBIO 92Q. International Women's Health and Human Rights—Stanford Introductory Seminar. Preference to sophomores. Focus is on women in poorer countries. Issues include women's status, poverty, violence, and unequal access to education, food, and health care. Maternal mortality, sexually transmitted diseases, refugee situations, traditional practices affecting women's and girls' health, trafficking and prostitution, and women's roles as they age. Readings include materials from women's organizations outside the U.S.
3 units, Aut (Firth-Murray)

HUMBIO 93Q. Human Subjects in Biomedical Research: The Media Perspective—Stanford Introductory Seminar. Preference to sophomores. Media reports on advances in treatment, some aimed towards cure or palliation of life threatening situations, others involving quality of life improvement. The media's perspective on sources in the scientific literature; practices in recruiting and compensating human subjects and in ensuring safety and confidentiality; non-technical discussion of the results scientific publications, and how the media interpret and popularize the findings.
2 units (Constantinou) not given 2003-04

HUMBIO 94Q. The Nation's Health—Stanford Introductory Seminar. Preference to sophomores. Overview of the nation's health. Topics: trends in healthy populations; determinants of health; health policy; values, ethics, and ideology; politics of health; public health and clinical preventive services; the collaboration of medicine and public health; the health care system; Medicare and Medicaid; medical markets and managed care; and quality of care. Weekly presentations by students. Enrollment limited to 15.
3 units, Aut (Lee, Heller)

HUMBIO 95Q. Gender and HIV/AIDS—Stanford Introductory Seminar. Preference to sophomores. Issues include individual HIV risk, societal vulnerability, and gender. Sources include web resources, primary research, and research data on HIV/AIDS including the National Health and Social Life Survey (NHSLS). Student presentations.

3-5 units, Spr (N. Brown)

HUMBIO 96Q. The Death Penalty: Policy, Philosophy, and Controversy—Stanford Introductory Seminar. Preference to sophomores.

3-4 units, Spr (Abrams)

HUMBIO 97Q. Sport, Exercise, and Health: Exploring Sports Medicine—Stanford Introductory Seminar. Preference to sophomores. Sports medicine is the practice of clinical medicine at the interface between health and performance, competition and well-being. While sports medicine had its origins in providing care to athletes, medical advances developed in care of athletes exerted a great effect on the nature and quality of care to the broader community. Topics include sports injuries, medical conditions associated with sport and exercise, ethics, coaching, women's issues, fitness and health, and sports science. Case studies.

3 units, Spr (Matheson)

HUMBIO 98Q. The Alien Tort Claims Act of 1789—Stanford Introductory Seminar. The Alien Tort Claims Act of 1789 (ATCA), the oldest American law currently in force, has been used in recent years by foreign claimants of human rights or environmental injury to sue U.S. companies in U.S. courts. International, human rights, and environmental law; civil procedure and legal history; and federalism and the constitutional separation of powers.

4 units, Aut (Rosencranz)

HUMBIO 99Q. Doctors Writing, Writing Doctors: Readings From Medical School, Medical Training, Medical Practice—Stanford Introductory Seminar. Preference to sophomores. For students considering medicine as a career. Goal is to acquaint students with medical school, training in medicine and surgery, and the practice of medicine and surgery. Topics include: how to pick a medical school and a residency; how medicine affects family life, especially children; the differences between surgical and medical specialties; the advantages and disadvantages among academic/teaching, pure research, group practice, HMO, hospital staff, or private practice; malpractice concerns; and financial considerations.

3 units, Aut (Zaroff)

ADVANCED

Open to non-majors with the proper prerequisites. Human Biology majors have preference when enrollment is restricted. All classes listed here fulfill the Human Biology upper-division requirement, including those that say "enroll in" another department.

HUMBIO 101. The Human Hand: Evolution, Ontogeny and Influence—The structure and function of the human hand from evolutionary, developmental, and cultural perspectives. Topics: the evolution of the five-digit limb pattern, homology and analogy in vertebrate limb patterns, variation in human hand patterns and their proposed developmental mechanisms, models of hand use, the evolution of true opposability, archaeology of tool manufacture and implementation, cultural perspectives on the significance of the hand in gesture, sign language, base ten mathematics, music, writing, symbolism, instrumentation, and art. Enrollment limited to 15. Prerequisites: Human Biology core or consent of instructor.

3 units, (Porzig) alternate years, given 2004-05

HUMBIO 102A,B. Children, Youth, and the Law—Analysis of the legal rights of children and adolescents in the U.S. and how those rights are defined, protected, and enforced through the legal process within the context of the developmental needs of children and youth and competing societal interests. Topics: the origins and definitions of children's rights; adoption; custody; the juvenile justice system (abused, neglected, and dependent children, status offenders such as runaways and truants, and minors accused of crimes); education; informed consent; health care; protection from harm and child welfare; due process; privacy, freedom of expression, and exercise of First Amendment rights. Interactive, using hypotheticals for discussion and analysis. A and B alternate yearly; students may take one or both.

A: *5 units (Abrams) alternate years, given 2004-05*

B: *5 units, Win (Abrams)*

HUMBIO 103. Parasites/Pestilence: Infectious Public Health Challenges—(Same as MI 103.) Parasitic and other diseases with public health impact. Pathogenesis, clinical syndromes, complex life cycles, and the interplay among environment, vectors, hosts, and reservoirs in historical context to understand public health policy approaches to halting disease transmission. Focus is on WHO TDR (World Health Organization Tropical Disease Research) targeted disease entities: river blindness (onchocerciasis), sleeping sickness (African Trypanosomiasis), leishmaniasis, schistosomiasis, mycobacterial disease (tuberculosis and leprosy), malaria, toxoplasmosis, dracunculiais, intestinal helminthes, and miscellaneous and emerging infections. Guest lecturers and experts in disease control and research of local and international renown. Problem sets, exams, and original proposal to solve a current disease.

3 units, Spr (Smith)

HUMBIO 104. Aging: From Biology to Social Policy—(Enroll in ANTHSCI 171.)

5 units, Spr (Barnett)

HUMBIO 105. Bioethics and Anthropology—(Enroll in ANTHSCI 174/274.)

5 units, Win (Koenig)

HUMBIO 106. The Anthropology of Death and Dying—(Enroll in ANTHSCI 175/275.)

5 units (R. Barrett) not given 2003-04

HUMBIO 107. Astrobiology and Space Exploration—Evolution is cast against space and time, focusing on the emergence of life, intelligence, and civilization on Earth and, possibly, elsewhere. The phenomenon of human space exploration and the biological, psychological, sociological, and ultimately, philosophical issues that emerge. Integrates information from astrophysics, biochemistry, chemistry, evolutionary biology, geology, paleontology, physiology, psychology, and sociology. Taught by scientists from NASA Ames Research Center. Enrollment limited to 30. Prerequisite: one year college-level mathematics, physics, chemistry, biology, or psychology.

3 units, Spr (Rothschild)

HUMBIO 108. Boys' Psychosocial Development—From early childhood through adolescence. Emphasis is on how boys' lives and experiences are embedded within their interpersonal relationships and social and cultural contexts. Interdisciplinary approach including perspectives from fields such as psychology, sociology, anthropology, family studies, and education.

4 units, Spr (Chu)

HUMBIO 109. Human Behavioral Biology—(Enroll in BIOSCI 150/250.)

6 units, Spr (Sapolsky) not given 2004-05

HUMBIO 110. Vertebrate Biology—The evolution, form, function, and behavior of the vertebrates including primitive fishes, birds, mammals, and human beings. Prerequisites: Biological Sciences or Human Biology core.

3-4 units (Porzig) alternate years, given 2004-05

HUMBIO 111. Human Physiology—(Enroll in BIOSCI 112/212.)

4 units (Baker) alternate years, not given 2004-05

HUMBIO 112. Hormones and Behavior—(Enroll in ANTHSCI 132/232.)

5 units (Staff) not given 2003-04

HUMBIO 114. The Human Genome and Disease: Evolution, Drift, and Populations—(Same as BIOSCI 109/209.) The variability of the human genome and the role of genomic information in research, drug discovery, and human health. Overview of the concepts and interpretations of genomic markers in medical research and real life applications. Human genomes in diverse populations. Original contributions from thought leaders in academia and industry and direct interaction between students and guest lecturers.

3 units, Spr (R. Heller)

HUMBIO 115A. Humans and Viruses—(Same as MI 115A.) Overview of human virology. Topics illustrate concepts in biology and the social sciences, focusing on emerging infections, viral classification, transmission and prevention, vaccination and treatment, eradication of disease, viral pathogenesis, mechanisms of virally-induced cancer, and viral evolution. Topics: molecular biology of genetic shift and drift in influenza virus, cellular tropism of HIV, developmental biology of virally-induced birth defects, clinical aspects of infantile diarrhea, social aspects of the common cold, policy issues of blood antibody tests, factors in pathogenesis and transmission of prions. Prerequisites: Human Biology core or consent of instructor.

6 units, Win (Siegel)

HUMBIO 115B. The Vaccine Revolution—(Same as MI 115B.) Advanced seminar. The human aspects of viral disease, focusing on recent discoveries, especially in the area of vaccine development and emerging infections. Journal club format: students select articles from primary scientific literature, write formal summaries, and synthesize it into a literature review on a specific topic. Emphasis is on the development of critical reading, analysis, experimental design, and interpretation of data. Students give four oral presentations and lead discussions based on their scientific journal reading. Enrollment limited to 10. Prerequisite: 115A.

5 units, Spr (Siegel) alternate years, given 2004-05

HUMBIO 116. Eye and Implications of Vision—The basic physiology of vision and how visual capabilities influence human endeavors. Topics: mechanisms of vision, vision in animals, illusions, visual physiology of art, the eye in history and literature, vision in sports. Lectures/seminar format with student participation, oral presentations, and a written thesis. Prerequisite: interest in mechanisms of vision and the humanities.

3 units, Win (Marmor)

HUMBIO 118. Human Diversity: A Linguistic Perspective—The diversity and distribution of human language and its implications for the origin and evolution of the human species. The origin of existing languages and the people who speak them. Where did the languages that we currently see in the world come from and how can this diversity be used to study human prehistory? Evidence from related fields (archaeology and human genetics). Topics: the origin of the Indo-European languages, the peopling of the Americas, and the evidence that all human languages share a common origin. GER:4a

3 units, Spr (Ruhlen)

HUMBIO 119. Conservation Biology—(Same as BIOSCI 144.) Introduction to the science of preserving biological diversity, its principles, policy, and application. Topics: biology of small populations, extinction, minimum viable population analysis, habitat fragmentation, reserve design and management, the Endangered Species Act, and conflict mediation. Case studies and local field trips. Four units for students who take the recommended field trips. Prerequisite: BIOSCI 43, HUMBIO 2A, or consent of instructor.

3-4 units, Win (Boggs, Launer)

HUMBIO 120. Human Nutrition—Introduction to the science of human nutrition. The study of food, the nutrients, and the substances therein. Their action, interaction, and balance in relation to health and disease. Emphasis is on the biological, chemical, and physiological processes by which humans ingest, digest, absorb, transport, utilize, and excrete food. Dietary composition and individual choices are discussed in relationship to the food supply, race, ethnic, religious, and social economic diversity. The relationships between nutrition and disease; eating disorders; ethnic diets; vegetarianism; nutritional deficiencies; nutritional and ergogenic supplementation; phytochemicals; and food safety. Prerequisite: Human Biology core or consent of instructor.

3 units, Spr (Gardner)

HUMBIO 121. Ethical Issues in the Neurosciences—Multidisciplinary approach to ethical questions raised by recent advances in the neurosciences. How these advances relate to medical therapy, social policy, and considerations of human nature (consciousness, free will, personal identity, and moral responsibility). Discussions with leading research scientists, legal experts, philosophers, and theologians. Topics: neurogenetics, fetal brain tissue therapy, medicalization of criminal behavior, cosmetic psychopharmacology, and the neurobiological basis of love, sexuality, and gender. Enrollment limited to 15. Prerequisite: Human Biology core, Biological Sciences core, or consent of instructor.

4-5 units, Spr (Hurlbut)

HUMBIO 121S. Becoming Human: The Evolutionary Origins of Spiritual, Religious and Moral Awareness

3-4 units (Hurlbut) not given 2003-04

HUMBIO 122. International Health Policy: Comparative National Health Care Systems—The structure and underlying policies of national health care systems in Europe, N. America, and Japan. How other countries have addressed issues of organization, finance, and allocation of scarce health care resources. Limited enrollment. Prerequisites: Human Biology 160, consent of instructor.

3 units, Win (Lee, Heller)

HUMBIO 123. Sexuality in Adolescence—Developmental perspective. Issues related to scientific, historical, and cultural perceptions; social influences on sexual development; sexual risk; and the limitations and future directions of research. Sexual identity and behavior, sexually transmitted diseases including HIV, pregnancy, abortion, gay and lesbian youth, sex education and condom availability in schools, mass media, exploitative sexual activity, and difficulties and limitations in studying adolescent sexuality. Legal and policy issues, gender differences, and international and historical trends. Research project, including original data collection. Limited enrollment.

3 units, Spr (N. Brown)

HUMBIO 124. Principles of Sleep Research—(Enroll in BIOSCI 149/249.)

4 units, Aut (C. Heller, Franken)

HUMBIO 125. Environmental Policy and Law—The role of government and citizens in formulating, implementing, and enforcing environmental policy. Using case studies, background readings, law cases, and statutes, seminar investigates the formal and informal political mechanisms involved in controlling pollution and protecting the environment. Topics: the respective roles of courts, legislatures, executive agencies, and nongovernmental organizations in shaping U.S. environmental policy. The pros and cons of regulatory and economic approaches to pollution control; environmental politics and ethics; air and water pollution; environmental justice; toxic substances and risk assessment; economics and trade; hazardous wastes.

5 units (Rosencranz) not given 2003-04

HUMBIO 126. Adolescent Development—Adolescence from sociological, psychological, and psychiatric perspectives. Topics: physical, physiological, and cognitive development; identity; peer group; parent/child relations; impact of school; vocational development; and problem outcomes (eating disorders, violence, and teen pregnancy). Prerequisite: 3B or PSYCH 1, or consent of instructor.

4 units, Win (S. Feldman)

HUMBIO 127. Seminar on Conducting Research—For juniors preparing for honors research in their senior year. Small groups design, conduct, analyze, and write up original research. Research skills including how to design a survey, enter data on a computer, and data analysis. Enrollment limited to 12. Pre- or corequisite: PSYCH 10 or equivalent, or consent of instructor.

4 units, Aut (S. Feldman)

HUMBIO 129. Ethnicity and Medicine Lecture Series—Weekly lecture series. Ethnic and cultural factors that impact patient care and culturally sensitive health care services. Contemporary research issues involving minority and underserved populations. Topics include health care issues and indigenous medical practices of African Americans, Asians, Latinos, Native Americans, and immigrants and refugees in both urban and rural settings. Research paper.

3 units, Spr (Garcia)

HUMBIO 130. Biology, Technology, and Human Life—Interdisciplinary approach to biomedical ethics. Social, moral, and aesthetic values guiding biomedical technology. How advances in biology are reshaping our relationship with nature, attitudes toward the body, and ideas about the meaning of human life. Topics: the use of medical technology to alter appearance and enhance performance, cloning, stem cells, and fetal tissue transplantation, biotherapy for criminal behavior, treatment of aging as a disease, and alteration of the body for space travel. Guests from the scientific and religious communities. Limited enrollment. Prerequisites: Human Biology or Biological Sciences core, or consent of instructor.

3-4 units, Win (Hurlbut)

HUMBIO 131. Natural Resources Policy—Focus is on federal public land and natural resources policy; mining, timber, and grazing law and policy; the legal aspects of forest, range, park, wilderness, wetlands, and wildlife management; recreation and preservation; and related issues. The role of the courts, administrative discretion, the Endangered Species Act, and the tension between protecting resources and respecting property rights. Students research one aspect of law and policy governing the management of natural resources.

5 units (Rosencranz) not given 2003-04

HUMBIO 132. Problem Behavior in Adolescence—Lecture/seminar. Risk, protective factors, treatments, and intervention programs designed to ameliorate or prevent these problems. Externalizing behaviors (violence, delinquency, drug abuse, risk taking), internalizing problems (depression, eating disorders, suicide), and sexuality-related problems (teen pregnancy, date violence, STDs/HIV). Enrollment limited to 20. Prerequisite: 126 or consent of instructor.

4 units, Spr (S. Feldman)

HUMBIO 133C. Human Evolutionary Anatomy—(Enroll in ANTHSCI 133C/233C.)

5 units (Staff) not given 2003-04

HUMBIO 134. Ecological Anthropology—(Enroll in ANTHSCI 164.)

3-5 units, Win (Staff)

HUMBIO 135. Global Environmental Policy—(Enroll in INTNLREL 134.)

5 units, Aut (Rosencranz)

HUMBIO 136. Conservation and Community Development in the Amazon—(Same as ANTHSCI 161A.) The prospects for achieving the dual goals of biodiversity conservation and community development in Amazonia. Case studies of recent efforts at biodiversity conservation, including national parks, biosphere reserves, pharmaceutical prospecting, ecotourism, extractive reserves, and agroforestry projects. The costs and benefits of conservation. To whom do these costs and benefits accrue? Critically evaluates Integrated Conservation-Development Projects (ICDPs) in the Amazon today. Optional field trip over Spring Break (at added expense, limited capacity) to ICDPs in the Peruvian Amazon. (HEF II)

5 units (Durham) not given 2003-04

HUMBIO 137. Demography of Humans and Other Species—(Same as BIOSCI 102.) The past century has seen enormous demographic change around the world, from fertility transitions to aging. Methods and applications of demography. Methods include demographic measures and estimates; mortality and lifetables; fertility and marriage; population projection or humans and other species. Applications include study of trends and patterns in human mortality and fertility; the life cycle perspective; development, human capital, and inequality; aging and public pensions; using and interpreting population projections. Prerequisites: calculus and basic statistics, or consent of instructor.

3 units, Aut (Tuljapurkar)

HUMBIO 138. Genes and Environment in Disease Causation: Implications for the Practice of Medicine and Public Health—The historical, contemporary, and future research and practice among genetics, epidemiology, clinical medicine, and public health as a source of insight for medicine and public health. Genetic and environmental contributions to multifactorial diseases; multidisciplinary approach to enhancing detection and diagnosis. The impact of the Human Genome Project on analysis of cardiovascular and neurological diseases, and cancer. Ethical and social issues in the use of genetic information.

2-4 units, Spr (Nelson, Popat)

HUMBIO 139. Primate Societies—(Enroll in ANTHSCI 131B/231B.)

5 units, Spr (Staff)

HUMBIO 140. Social Class, Race/Ethnicity, Health—(Enroll in SOC 141A/241A.)

3 units, Win (Barr)

HUMBIO 141. Race, Poverty, and the Environment—Seminar on environmental conditions and disproportionate environmental impacts in poor and minority communities in the U.S., correlating race, ethnicity, and income to exposure to environmental and public health hazards. Case studies on migrant workers and Native American subsistence fishers.

5 units (Rosencranz) not given 2003-04

HUMBIO 142C. Alternative Spring Break: AIDS and HIV in San Francisco

1 unit, Win (Siegel)

HUMBIO 142G. Post Field Seminar: A Practical Next Step for Students Returning from Abroad—For students who have recently worked abroad for two months or longer. A forum for students to share their experiences and what they learned through their international research, internship, or volunteer work. A lecture component connects international experiences with at-home activism and helps students explore directions for future work, either domestically or internationally, that builds on their experiences abroad. Students create a final product to benefit the community in which they worked and/or be used as an educational tool locally. Focus is on a practical next step for students interested in international development and related fields.

1 unit (Siegel) not given 2003-04

HUMBIO 143. Globalization, Labor, and the Environment—Interdisciplinary. The responsibility of multinational corporations and institutions (World Bank, WTO, IMF) in the global economy, emphasizing labor and environmental standards in developing countries. Local and global case studies and research focus on social justice and empowerment for domestic and foreign victims of labor, environmental, and human rights abuses, the role of certain multinational institutions and corporations in those abuses, and potential tools for holding these bodies more accountable. Service-learning component with Bay Area organizations.

4 units (Rosencranz) not given 2003-04

HUMBIO 145. Children's Citizenship: Justice Across Generations—(Enroll in POLISCI 131, ETHICSOC 131.)

5 units (Reich) not given 2003-04

HUMBIO 146. The AIDS Epidemic: Biology, Behavior and Global Response—Interdisciplinary approach to the HIV/AIDS pandemic from the view of public health, public policy nationally and internationally. The global epidemic of a fatal, sexually transmitted disease has led to attempts to change human behavior, produce a vaccine, and other approaches that bring into sharp focus the need for cost effectiveness analysis as a part of influencing public policy.

3 units, Aut (Katzenstein)

HUMBIO 147. Controlling Climate Change in the 21st Century—(Enroll in EARTHSYS 147/247, BIOSCI 147/247.)

3 units (Schneider, Rosencranz) alternate years, given 2004-05

HUMBIO 148. Promoting Health Over the Life Course: Multidisciplinary Perspectives—Disease prevention topics pertinent to different stages of the life span with focus on nutrition, physical activity, obesity, behavior modification, and chronic disease prevention management. Disease prevention in the context of social problems related to the family, school, workplace, and the health care system.

3 units, Win (Alles, Stefanick)

HUMBIO 149. Birds to Words: Cognition, Communication, and Language—(Enroll in PSYCH 137.)

3 units, Win (A. Fernald, Ramscar)

HUMBIO 150. Current Topics and Controversies in Women's Health—Interdisciplinary approach. Topics include health research, legal and policy issues, sex and gender differences, scientific and cultural perspectives, social influences, environmental and lifestyle effects on health, complementary medicine, and issues related to special populations.

3 units, Spr (Giudice)

HUMBIO 151. The Rise of Scientific Medicine—(Enroll in HISTORY 33A.)

4-5 units, Spr (Lenoir)

HUMBIO 152. Environment and Growth in Developing Countries—The tension between environmental protection and economic growth in: Egypt, Russia (Siberia), China, India, Indonesia, Nigeria, Mexico, and Ecuador. Each student is responsible for an environmental profile of a chosen developing country.

5 units, Aut (Rosencranz)

HUMBIO 153: Reading: Science, Education, and Politics—How children are taught to read is a controversial topic often described as the reading wars. The intellectual foundations of reading curriculum development including the contributions of scientists, educators, and policy makers. The neural mechanisms of reading including the methodology used to understand and measure complex behavior. Intervention studies designed to improve reading skills and the implications of basic and applied science for social policy.

3 units, Spr (Wandell)

HUMBIO 154: Epidemiology and Cancer—Basic methods of epidemiology relevant to human social and biological science. The distribution of major types of human cancer and their epidemiologic characteristics. The role of clinical trials and interventions.

4 units, Win (Fisher)

HUMBIO 155. Exercise Physiology—How body systems respond to the stress of acute exercise and adapt to chronic exercise training. How the cardiovascular system adapts to optimize oxygen delivery and utilization, how muscles generate force and hypertrophy in response to training, how metabolic pathways are regulated to support the increased energy demand of exercise. Theories on the causes of fatigue and muscle soreness, and on what limits human performance. How exercise capacity is influenced by aging, gender, and environmental conditions such as high altitude, heat, and cold. Prerequisite: Human Biology core or consent of instructor.

4 units, Aut (Friedlander)

HUMBIO 155S. Applied Topics in Exercise Physiology and Metabolism—Student-selected topics in exercise physiology. Emphasis is on readings of scientific research. Student presentations. Summary paper. Enrollment limited to 12. Prerequisites: 155, consent of instructor.

3 units, Spr (Friedlander)

HUMBIO 156. Human Developmental Biology and Medicine—The biological, medical, and social aspects of normal and abnormal human development. Topics: in vitro fertilization and embryo transfer; gene and cell therapy; gametogenesis; pattern formation in the nervous system and limb development; gene and grand multiple pregnancies; prematurity, in utero effects of teratogens; sex determination and differentiation; growth control; gigantism and dwarfism; neural tube defects; cardiac morphogenesis; progress in the developmental biology of humans. Limited enrollment. Prerequisites: Human Biology or Biological Sciences core, or consent of instructor.

3-4 units, Win (Porzig)

HUMBIO 157. Human Ecology of the Amazon—(Enroll in ANTHSCI 161B/261B.)

5 units (Irvine) not given 2003-04

HUMBIO 159. Sports Medicine—The themes of sports, exercise, health, and medicine are integrated throughout the entire human performance continuum, from the use of exercise as a form of therapy to the injuries and illnesses that result from sports and exercise. Content in the basic and applied sciences is from physiology, nutrition, psychology, and biomechanics. Medical topics in the problems exacerbated or caused by exercise and sport; maximizing performance in elite athletes; and population-based issues such as exercise and its relationship to health, women's issues, drugs in sport, and exercise and aging. Prerequisite: medical school enrollment, upper-division Human Biology standing, or consent of instructor.

4 units (Matheson) not given 2003-04

HUMBIO 160. Health Care in America: The Organizations and Institutions that Shape the Health Care System—Overview of the health care system in the U.S., examining several key organizations and institutions that shape health policy and health care delivery. By understanding the forces that affect health and health care, students assess more critically options for health care reform.

3 units, Aut (Barr)

HUMBIO 160A. American Health Policy—Key issues surrounding health care reform, and the policy making process as it pertains to health care. Student presentations. Prerequisites: 160, consent of instructor.

3 units, Spr (Barr)

HUMBIO 160B. Senior Honors Colloquium in Health Policy—(Same as SOC 201H.) Limited to students doing senior honors research in Human Biology or Sociology. Year-long class to assist students doing honors research pertaining to sociology or social policy. Weekly discussions center around defining the research question, identifying data acquisition methods, carrying out data analysis, and writing the honors thesis. Prerequisite: consent of instructor.

1 unit, Aut, Win, Spr (Barr, Heller, Lee)

HUMBIO 160W. Seminar in Federal Health and Environment Programs/Agencies—Priority enrollment for students going to Stanford in Washington, Winter Quarter. Introduces health policy making in Washington, D.C., with an emphasis on understanding the agencies within the federal government responsible for developing and carrying out health policy. Weekly lectures/discussions. Enrollment limited to 25.

3 units, Aut (Lee)

HUMBIO 162. Primate Evolution—(Enroll in ANTHSCI 131A.)

5 units, Win (De Gusta)

HUMBIO 164A. Ethnoecology—(Enroll in ANTHSCI 164A.)

5 units, Win (Irvine)

HUMBIO 165. Environmental Justice in the U.S.—(Enroll in ANTHSCI 168B/268B.)
5 units (Staff) not given 2003-04

HUMBIO 167. International Health—Introduction to concepts of health and wellness and the major descriptors and determinants of health status, international organizations and control programs, disease-related problems within population groups from an epidemiologic viewpoint, health care delivery methods, efforts to improve health through examination of programs and projects currently underway and previously implemented. Emphasis is on the cultural, economic, and political contexts in international health. Prerequisites: Human Biology core or consent of instructor.
4 units, Spr (Wang)

HUMBIO 168. Medical Anthropology—(Enroll in ANTHSCI 10.)
2-5 units, Win (R. Barrett)

HUMBIO 169. Critical Issues in International Women's Health—Women's lives, from childhood through adolescence, reproductive years, and aging. Economic, social, and human rights factors, and the importance of women's capacities to have good health and manage their lives in the face of societal pressures and obstacles. Emphasis is on life or death issues of women's health that depend on their capacity to negotiate or feel empowered, including maternal mortality, violence, HIV/AIDS, access to abortion, and sex trafficking. Organizations addressing these issues.
4 units, Aut, Spr (Firth-Murray)

HUMBIO 170. Social Policy for Sustainable Resource Use—(Enroll in ANTHSCI 167/267.)
5 units, Aut (Irvine)

HUMBIO 171. Indigenous Peoples and Environmental Problems—(Same as ANTHSCI 162/262.) The social and cultural consequences of contemporary environmental problems. The impact of market economies, development efforts, and conservation projects on indigenous peoples, emphasizing the Amazon, E. Africa, Alaska, and Central America. The role of indigenous grass roots organizations in combating environmental destruction and degradation of homeland areas.
3-5 units (Durham, Irvine) not given 2003-04

HUMBIO 172. Indigenous Forest Management—(Enroll in ANTHSCI 166A/266A.)
5 units (Irvine) not given 2003-04

HUMBIO 173. Medical Ethics—(Enroll in PHIL 78, ETHICSOC 78.)
4 units, Spr (Collier)

HUMBIO 174. Ethics and Politics in Public Service—(Enroll in POLISCI 133, ETHICSOC 133.)
5 units, Spr (Reich)

HUMBIO 175. Health Care as Seen Through Medical History, Literature, and the Arts—The differences between disease as pathology and as the patient's experience. Topics include patient-doctor relationships, medical technology, the changing focus on illness, gender issues, mental illness, sick children, death and dying.
4 units, Aut (Zaroff)

HUMBIO 176. Development and Disease Mechanisms—(Enroll in DBIO 201.)
4 units, Aut (Scott, Crabtree, Porzig, Kingsley, Kim)

HUMBIO 177. Skeletal Development and Evolution—(Enroll in ME 280.)
3 units, Spr (Carter)

HUMBIO 180. Beginning Osteology—(Same as ANTHSCI 133A/233A.) The study of human skeletal remains. Basic bone nomenclature, biology and anatomy, growth and development, and methods for assessing age and sex. Emphasis is on hands-on study and identification of human skeletal material.
5 units, Win (DeGusta)

HUMBIO 180G. Introduction to Anthropological Genetics—(Enroll in ANTHSCI 180/280.)
5 units (Mountain) not given 2003-04

HUMBIO 182A. Qualitative Research Methodology—Goal is to develop knowledge and skills for designing and conducting qualitative research studies including purposes, conceptual contexts, research questions, methods, validity issues, and interactions among these facets. Each student designs a qualitative research study.
3 units, Aut, Win, Spr (Wanat)

HUMBIO 182B. Advanced Data Analysis in Qualitative Research—For students analyzing qualitative data from their own research. Approaches to analyzing qualitative data from interviews, observations, and review of documents. Class functions as research team to help each student evaluate strategies.
2-4 units, Aut (Wanat)

HUMBIO 182C: Writing in Qualitative Research—For students writing up their own qualitative research. Students prepare a complete draft presenting their own qualitative research study including results, with reports drafted section by section, week by week. Class provides feedback, guidance, support.
2-4 units, Win, Spr (Wanat)

HUMBIO 183. Hunter-Gatherers in Archaeological Perspective—(Enroll in ANTHSCI 141/241.)
4-5 units (Rick) not given 2003-04

HUMBIO 184. The Darwinian Revolution—(Enroll in HISTORY 133/333.)
4 units (Lenoir) not given 2003-04

HUMBIO 185. Science and Religion—(Enroll in RELIGST 270.)
4 units (Bergman, Eisen) not given 2003-04

HUMBIO 186. Evolution of Human Disease—(Enroll in ANTHSCI 172/272.)
5 units (R. Barrett) not given 2003-04

HUMBIO 187. Introduction to Imaging and Image-Based Human Anatomy—(Enroll in RAD 220.)
3 units, Aut (Gold, Butts)

HUMBIO 188. Issues in the Assessment and Care of Older Adults and Their Families—Aging and memory problems in elderly adults. The stress of caring for a person with memory problems, emphasizing medically under-served, low income, and culturally diverse communities. Effective interventions for the reduction of caregiver stress and burden. Service learning component includes in-home assessments of elderly adults and their family caregivers.
3 units, Aut (Gallagher-Thompson)

HUMBIO 189. Philosophy of Biology—(Enroll in PHIL 167A/267A.)
4 units, Aut (Sober)

HUMBIO 190. Introduction to Honors in Human Biology—Guest speakers discuss honors research. Students attend at least one of the Honors Symposium presentations in May. (AU)
1 unit, Spr (R. Fernald)

HUMBIO 193. Research in Human Biology—Independent research conducted under faculty supervision, taken junior or senior year, normally (but not necessarily) in pursuit of an honors project. May be taken more than one quarter for credit. Students must complete application in student services office.
1-5 units, Aut, Win, Spr

HUMBIO 194. Honors—Completion of the honors project, normally taken in the student's final quarter. First component: the honors thesis, a final paper providing evidence of rigorous research, fully referenced, and written in an accepted scientific style. Second component: participation

in the honors symposium, including a 10-minute oral presentation followed by a brief question and answer session. Prerequisites: 193 (or 199), and acceptance into the honors program.

1-10 units, Aut, Win, Spr

HUMBIO 197. Human Biology Internship—Limited to and required of Human Biology majors. Combines course work with a supervised field, community, or lab experience of student's choosing. Must be pre-approved by Human Biology faculty adviser and student adviser before work begins, and initiated at least three quarters prior to graduation. Prerequisite: Human Biology Core.

1-4 units, Aut, Win, Spr (Staff)

HUMBIO 197S. Service Learning Internship in Human Biology—(Fulfills the Human Biology internship requirement.) Provides 100 hours of work in service capacity with a non-profit, community health agency. Students are required to go through an orientation to their community and participate in organized reflection activities throughout their experience. Prerequisite: consent of instructor and admittance into the Human Biology Service-Learning Program.

1-4 units, Aut, Win, Spr (Wanat)

HUMBIO 198. Senior Tutorial in Human Biology—Intensive reading for Human Biology majors in exceptional circumstances and under sponsorship of Human Biology associated faculty. Students must apply through Human Biology student services before registering. Reading list, paper, and evaluation required.

1-5 units, Aut, Win, Spr (Staff)

HUMBIO 199. Directed Reading/Special Projects—Human Biology majors must obtain a sponsor from the Human Biology associated faculty or the Academic Council. Non-majors and/or students who have not declared must obtain a sponsor only from the Human Biology associated faculty. Students must complete application in student services office.

1-4 units, Aut, Win, Spr (Staff)

HUMBIO 199L. Special Projects: The Death Penalty: Human Biology, Law, and Policy—Combines academic study with direct student involvement. Students participate in forensic research and case investigation, including DNA evidence, psychological and physiological development, mental and physical disabilities, and witness interviews. The philosophy, structure, and application of capital punishment in the U.S. Goal is to examine, understand, and challenge the various sides of the issues involved in the death penalty with the perspective of involvement in a real case. The course is not taught from any preconceived belief or with any political or philosophical agenda except to involve students in an intellectual challenge of policy and philosophy.

3 units, Aut, Win, Spr (Abrams)

HUMBIO 200. Teaching of Human Biology—For upper division undergraduates and graduate students. Practical experience in teaching Human Biology or serving as an assistant in a lecture course.

1-5 units, Aut, Win, Spr (Staff)

OVERSEAS STUDIES

Descriptions of these courses are in the "Overseas Studies" section of this bulletin or at the Overseas Studies office, 126 Sweet Hall. Students overseas are encouraged to participate in a wide range of internships and independent research as well.

AUSTRALIA

HUMBIO 61X. Coral Reef Ecosystems—(Same as BIOSCI 109Z, CEE 168X, EARTHSYS 120X.)

3 units, Aut (Hoegh-Guldberg)

HUMBIO 62X. Coastal Resource Management—(Same as BIOSCI 110Z, CEE 168Y, EARTHSYS 121X.)

3 units, Aut (Johnstone)

HUMBIO 63X. Coastal Forest Ecosystems—(Same as BIOSCI 111Z, CEE 168Z, EARTHSYS 122X.)

3 units, Aut (Pole)

FLORENCE

HUMBIO 158X. Plagues in History: Lessons in Human Health and Human Society

3 units, Spr (Altman)

OXFORD

HUMBIO 115P. Prions: From Kuru to Mad Cow Disease

4 units, Spr (Siegel)

HUMBIO 115X. Smallpox: Past, Present, and Future

4 units, Spr (Siegel)

PARIS

HUMBIO 153X. Health Systems and Health Insurance: France and the U.S., a Comparison across Space and Time—(Same as PUBLPOL 111.)

4-5 units, Win (Chaix-Couturier)