

Honors Program and must maintain a minimum grade point average of 3.6 in courses that count toward the mathematics major.

The application includes a one- to two-page proposal of the planned thesis and the signature of the faculty member who will be the thesis adviser.

The thesis must be submitted no later than two weeks before the end of classes in the semester of graduation. The oral examination will take place by the last day of classes in the semester of graduation. Highest honors will be awarded for a thesis that contains original high-quality research results in combination with an oral defense at the highest quality level.

Students may sign up for Math 4999 during one semester of their senior year. Math 4999 will not count toward the 21 credit hours requirement in Program III.

Please consult the director of undergraduate studies for details.

Minor in Mathematics

The minor in mathematics requires at least 15 credit hours in mathematics, including:

1. Completion of a calculus sequence: 2300, 2310, or 2500–2501.
2. Linear algebra and differential equations: as in the Program II major.
3. At least 6 credit hours not used to satisfy item 2 from 2800 or above.

Completion of a single-variable calculus sequence (1300–1301) is a prerequisite for the minor, but does not count toward the credit hours of the minor.

Licensure for Teaching

Candidates for teacher licensure at the secondary level in mathematics should refer to the chapter on Licensure for Teaching in the Peabody College section of this catalog.

Calculus

Several calculus sequences are available:

1100; 1200–1201; 1300–1301–2300; 1300-1301-2310.

The courses in these sequences cover similar material, but at different rates, and therefore overlap in content and credit. Students should not switch from one to another without approval of the department. Such switching may result in loss of credit. Students intending to take mathematics classes beyond one year of calculus are advised to enroll in the 1300–1301–2300 sequence or in the 1300-1301-2310 sequence.

First-year students with test scores of 5 on the Calculus BC advanced placement examination, thereby earning AP credit for 1300–1301, may choose to enroll in the 2500–2501 sequence. The combination of 2500–2501 is a blend of multivariable calculus and linear algebra, with an emphasis on rigorous proofs.

Course descriptions can be found in the courses section of this catalog.

Medicine, Health, and Society

DIRECTOR Jonathan M. Metzl

ASSISTANT DIRECTOR JuLeigh Petty

DIRECTOR OF UNDERGRADUATE STUDIES Dominique Behague

DIRECTOR OF GRADUATE STUDIES JuLeigh Petty

DIRECTOR OF ADVISING Courtney S. Peterson

DIRECTOR OF EVALUATION JuLeigh Petty

PROFESSORS Christopher Carpenter (Economics), Derek Griffith, Jonathan M. Metzl, Hector Myers

ASSOCIATE PROFESSORS Dominique Béhague, Aimi Hamraie, Martha W. Jones, Kenneth MacLeish, Lijun Song, Laura Stark

ASSISTANT PROFESSORS Lauren Gaydosh, Gilbert Gonzales, Bianca Manago (Sociology), Tara McKay

ASSISTANT PROFESSORS OF PRACTICE Jamie Pope

SENIOR LECTURERS Celina Callahan-Kapoor, Courtney S. Peterson, JuLeigh Petty, Danielle Picard

WRITERS IN RESIDENCE Odie Lindsey, Caroline Williams

Affiliated Faculty

PROFESSORS Kathryn Anderson (Economics), Victor Anderson (Christian Ethics), David Aronoff (Medicine), Gregory Barz (Ethnomusicology), Michael Bess (History), James Blumstein (Health Law and Policy), Frank Boehm (Obstetrics and Gynecology), Peter Buerhaus (Nursing), C. André Christie-Mizell (Sociology), Larry Churchill (Medicine), Ellen Clayton (Pediatrics and Law), Jay Clayton (English), Charles Cobb (Molecular Physiology and Physics), Bruce Compas (Psychology and Human Development), Katherine Crawford (History), Kate Daniels (English), Dennis Dickerson (History), Edward Fisher (Anthropology), Lenn Goodman (Philosophy), Douglas Heimburger (Medicine), Joni Hersch (Law and Economics), David Hess (Sociology), Kathleen Hoover-Dempsey (Psychology and Human Development), Sarah Igo (History), Carl Johnson (Biological Sciences), Cindy Kam (Political Science), John Lachs (Philosophy), Jane Landers (History), Jana Lauderdale (Nursing), Pat Levitt (Pharmacology), Terry A. Maroney (Law), Richard McCarty (Psychology), Melissa McPheeters (Health Policy), Timothy McNamara (Psychology), Velma McBride Murry (Human and Organizational Development), Linda Norman (Nursing), Russell Rothman (Medicine), Sharon Shields (Human and Organizational Development), John Tarpley (Surgery), Benigno Trigo (Spanish), Arleen Tuchman (History), Holly Tucker (French), Bart Victor (Organization Studies), Kip Viscusi (Law and Economics), Lynn Walker (Pediatrics and Psychology and Human Development), Kenneth Wallston (Nursing and Psychology), David W. Wright (Chemistry), Laurence Zwiebel (Biological Sciences)

ASSOCIATE PROFESSORS Muktar Aliyu (Health Policy and Medicine), Laura Carpenter (Sociology), Beth Conklin (Anthropology), Julián F. Hillyer (Biological Sciences), Rolanda Johnson (Nursing), Melanie Lutenbacher (Nursing), Abelardo Moncayo (Health Policy), Ifeoma Nwankwo (English), Evelyn Patterson (Sociology), Scott Pearson (Surgery), Louise Rollins-Smith (Nursing), Ruth Rogaski (History), Norbert Ross (Anthropology), David Schlundt (Psychology), Phillis Sheppard (Religion), Tiffany Tung (Anthropology), Timothy J. Vogus (Management and Organization Studies)

ASSISTANT PROFESSORS Carolyn Audet (Preventive Medicine), Ian Campbell (Clinical Medicine), Joseph B. Fanning (Medicine), Ebony McGee (Education), Troy Moon (Pediatric Infectious Disease), Sayeh Nikpay (Health Policy), Kevin T. Seale (Biomedical Engineering)

SENIOR LECTURERS Lorraine Catanzaro (Spanish), Nathalie Porter (French), Elisabeth H. Sandberg (Psychology)

THE Program in Medicine, Health, and Society offers an interdisciplinary major (36 credit hours) and minor (18 credit hours) for students interested in studying health-related beliefs and practices in their social and cultural contexts. As part of the requirements of the major, students must declare and complete 12 credit hours in one of the six concentrations in Medicine, Health, and Society: global health; health behaviors and health sciences; health economics and policy; inequality, intersectionality, and health justice; medicine, humanities, and arts; or critical health studies. An honors program is available. MHS draws on a variety of fields in the social sciences and humanities—anthropology, economics, history, literature, philosophy/ethics, psychology, sociology, and religious studies. The major will be of particular interest to students preparing for careers in health-related professions as well as to students interested in examining an important part of human experience from multiple perspectives and developing a critical understanding of contemporary society. Students are encouraged to take advantage of the opportunities offered by the Center for Medicine, Health, and Society. Visit vanderbilt.edu/mhs for more details.

The program is directed by Jonathan M. Metz, Frederick B. Rentschler II Professor of Sociology and Medicine, Health, and Society.

Program of Concentration in Medicine, Health, and Society

The major requires a minimum of 36 credit hours of course work, distributed as follows:

Note: No more than 21 credit hours may be in courses designated MHS. Other than MHS, no more than 12 credit hours may be in the same subject area; A&S Psychology and Peabody Psychology are considered the same subject area for purposes of the major/minor.

1. Core Courses — Students must complete one of the following (3 credit hours):

MHS 1920, Politics of Health
MHS 1930, Social Dimensions of Health and Illness
MHS 1940, Racial and Ethnic Health Disparities
MHS 1950, Theories of the Body
MHS 2110, American Medicine in the World
MHS 2230, Masculinity and Men's Health
ANTH 2342, Biology of Inequality

2. Concentration — Students must complete four courses not used to satisfy the core course requirement or the elective requirements in one of the following six concentrations (12 credit hours). Students must declare one of the following concentrations when they declare the major.

Note: Courses must be from at least two subject areas.

A. Global health

- B. Health policies and economics
- C. Health behaviors and health sciences
- D. Inequality, intersectionality, and health justice
- E. Medicine, humanities, and arts
- F. Critical health studies

See below for a list of courses that count for Concentrations A, B, C, D, and E. Students choosing concentration F must propose a set of four courses (12 credit hours) that form a coherent program of study related to critical health studies and receive approval from the director of undergraduate studies.

3. Electives — Seven courses not used to satisfy the core course or concentration requirements chosen from the list of approved courses (21 credit hours).

4. Disciplinary Requirement — At least 3 credit hours from the following courses must be used to satisfy the concentration requirement or electives requirement.

- ANTH 2213W, Food, Identity, and Culture
- ANTH 3143, Medical Anthropology
- ANTH 3141, Anthropology of Healing
- ANTH 3345, Genetics in Society
- ECON 2350, Health Care Policy
- ECON 3350, Economics of Health
- HIST 2800, Modern Medicine
- MHS 1960, Health Humanities
- MHS 3050W, Medicine and Literature
- MHS 3120, Medicine, Science, and Technology
- PHIL 1008, 1008W, Introduction to Medical Ethics
- PHIL 3608, Ethics and Medicine
- PSY 3635, Health Psychology
- SOC 3301, Society and Medicine
- SOC 3304, Race, Gender, and Health
- SOC 3306, Gender and Medical Work

In order to graduate with a major in MHS, students must take a written exam in the second semester of their senior year. (Students who are away during the second semester of their senior year because they are studying abroad or graduating early should schedule the exam during the first semester.) The exam is not graded and no grade will appear on the student's transcript. The purpose of the exam is to ascertain the extent to which MHS majors demonstrate knowledge of the MHS curriculum.

Honors Program

The Honors Program in Medicine, Health, and Society offers superior students a more intensive concentration within their major field. Admission to the program requires:

1. A 3.3 cumulative grade point average.
2. A 3.3 cumulative grade point average in courses that count toward the *Medicine, Health, and Society* major.
3. An application that (a) describes the proposed topic; (b) identifies the faculty member who will serve as the thesis adviser; and (c) includes a letter of recommendation from the proposed thesis adviser.

Completion of the program requires:

1. Two semesters, 3 credit hours each semester of the senior year in MHS 4998/4999.
2. An honors thesis of approximately fifty pages that reveals an interdisciplinary perspective, submitted no later than two weeks before the first day of final exams in the second semester of the senior year, and approved by a committee of at least two faculty members (one of whom must have their primary appointment in Medicine, Health, and Society).
3. Successful completion of an oral examination focusing on the topic of the thesis.

Minor in Medicine, Health, and Society

The minor consists of a minimum of 18 credit hours of course work, distributed as follows:

Note: No more than 9 credit hours may be in the same subject area; A&S Psychology and Peabody Psychology are considered the same subject area for purposes of the major/minor.

1. Core Courses — Students must complete one of the core courses of the major (3 credit hours).
2. Concentration — Students must complete three courses in one of the following five concentrations (9 credit hours). Students must declare one of the following concentrations when they declare the minor.
 - A. Global health
 - B. Health policies and economics
 - C. Health behaviors and health sciences
 - D. Inequality, intersectionality, and health justice
 - E. Medicine, humanities, and arts
3. Electives — Two additional courses, excluding those with an asterisk, chosen from the list of approved courses.
(6 credit hours)
4. Disciplinary Requirement — At least 3 credit hours from the following courses must be used to satisfy the concentration requirement or electives requirement.
 - ANTH 2213W, Food, Identity, and Culture
 - ANTH 3143, Medical Anthropology
 - ANTH 3141, Anthropology of Healing
 - ANTH 3345, Genetics in Society
 - ECON 2350, Health Care Policy
 - ECON 3350, Economics of Health
 - HIST 2800, Modern Medicine
 - MHS 1960, Health Humanities
 - MHS 3050W, Medicine and Literature
 - MHS 3120, Medicine, Science, and Technology
 - PHIL 1008, 1008W, Introduction to Medical Ethics
 - PHIL 3608, Ethics and Medicine
 - PSY 3635, Health Psychology
 - SOC 3301, Society and Medicine
 - SOC 3304, Race, Gender, and Health
 - SOC 3306, Gender and Medical Work

Approved Courses

(Please consult the director of undergraduate studies for approval of “as appropriate” courses in concentration areas.)

CONCENTRATION A: Global Health

AMERICAN STUDIES: 3200, Global Perspectives on the U.S.

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2113W, Food, Identity, and Culture; 3122, The Anthropology of Globalization; 3138 Global Food Politics; 3143, Medical Anthropology.

ASIAN STUDIES: 2630, Chinese Medicine.

BIOLOGICAL SCIENCES: 1111, First-Year Writing Seminar (as appropriate); 3965, Undergraduate Seminar (as appropriate).

FRENCH: 3112, Medical French in Intercultural Contexts.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2267, Seminar on Gender and Violence; 3201, Women and Gender in Transnational Context.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 2160, Medicine in Islam.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3200, Global Dimensions of Community Development; 3231, Introduction to Health Services.

INTERDISCIPLINARY STUDIES: 3831, Global Citizenship and Service; 3832, Global Community Service; 3833, Seminar in Global Citizenship and Service (as appropriate).

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future.

MEDICINE, HEALTH, AND SOCIETY: 2110, American Medicine and the World; 2310, Chinese Society and Medicine; 2410, HIV/AIDS in the Global Community; 2420, Economic Demography and Global Health; 2610, Global Health Crises; 2940, Race, Citizenship, and Health; 3000, Undergraduate Seminar (as appropriate); 3010, Perspectives on Global Public Health; 3110, Global Health and Social Justice; 3310, Healthcare Systems Comparisons; 3890, Special Topics (as appropriate); 4010, Psychiatry, Culture, and Globalization.

POLITICAL SCIENCE: 1111, First-Year Writing Seminar (as appropriate); 2215, Change in Developing Countries; 2236, The Politics of Global Inequality; 3893, Selected Topics in American Government (as appropriate); 3894, Selected Topics in Comparative Politics (as appropriate).

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3314, Environmental Inequality and Justice; 3321, Population and Society.

SPANISH: 3830, Spanish for the Medical Profession; 4760, Literature and Medicine.

CONCENTRATION B: Health Policies and Economics

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2109, Food Politics in America; 3144, Politics of Reproductive Health; 3890, Special Topics (as appropriate).

ECONOMICS: 1010, Principles of Macroeconomics; 1020, Principles of Microeconomics; 1111, First-Year Writing Seminar (as appropriate); 1500, Economic Statistics; 1510, Intensive Economic Statistics; 2350, Health Care Policy; 3050, Introduction to Econometrics; 3350, Economics of Health.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate).

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 2800, Modern Medicine.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3231, Introduction to Health Services; 3241, Introduction to Health Policy; 3331, Managing Health Care Organizations; 3205, Policy Analysis Methods.

LATIN AMERICAN STUDIES: 2102, Brazil: Past, Present, and Future.

MEDICINE, HEALTH, AND SOCIETY: 1920, Politics of Health; 2120, Health Social Movements; 2520, Autism in Context; 2320, Medicine, Law, and Society; 2420, Economic Demography and Global Health; 2920, Medicine on Trial; 3000, Undergraduate Seminar (as appropriate); 3120, Medicine, Science, and Technology; 3320, Introduction to U.S. Health Care Policy; 3890, Special Topics (as appropriate).

PHILOSOPHY: 1008, 1008W, Introduction to Medical Ethics; 1111, First-Year Writing Seminar (as appropriate); 3608, Ethics and Medicine.

POLITICAL SCIENCE: 1111, First-Year Writing Seminar (as appropriate); 2236, The Politics of Global Inequality; 2270, Conducting Political Research; 3893, Selected Topics in American Government (as appropriate); 3894, Selected Topics in Comparative Politics (as appropriate).

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3302, Poverty, Health, and Politics; 3306, Gender and Medical Work; 3314, Environmental Inequality and Justice; 4961, Seminars in Selected Topics (as appropriate).

UNIVERSITY: 3325, Health Policy Analysis and Advocacy.

CONCENTRATION C: Health Behavior and Health Sciences

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2227, Food in the Ancient World; 3344, Genetic Anthropology Lab Techniques; 3345, Genetics in Society; 3346, Human Adaptation and Disease; 3890, Special Topics (as appropriate); 4345, Human Evolutionary Genetics.

BIOLOGICAL SCIENCES: 1105, Human Biology; 1111, First-Year Writing Seminar (as appropriate); 3243 Genetics of Disease; 3245, Biology of Cancer; 3254, Neurobiology of Behavior; 3270, Statistical Methods in Biology; 3965, Undergraduate Seminar (as appropriate).

BIOMEDICAL ENGINEERING: 3200, Analysis of Biomedical Data.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2240, Introduction to Women's Health.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3221, Health Service Delivery to Diverse Populations; 3311, Introduction to Health Promotion.

MEDICINE, HEALTH, AND SOCIETY: 1930, Social Dimensions of Health and Illness; 1940, Racial and Ethnic Health Disparities; 2120, Health Social Movements; 2330, Men's Health Research and Policy; 2430, Social Capital and Health; 2950, Healing Animals; 3000, Undergraduate Seminar (as appropriate); 3030, Community Health Research; 3450, Mental Illness Narratives; 3890, Special Topics (as appropriate).

NEUROSCIENCE: 2201, Neuroscience; 3235, Biological Basis of Mental Disorders.

PSYCHOLOGY: 1111, First-Year Writing Seminar (as appropriate); 1200, General Psychology; 2100, Quantitative Methods; 2150, Principles of Experimental Design; 3100, Abnormal Psychology; 3620, Schizophrenia; 3625, Depression; 3635, Health Psychology; 3705, Human Sexuality; 3750, Perception; 3760, Mind and Brain; 3785, Brain Damage and Cognition; PSY-PC-1250, Developmental Psychology; PSY-PC 2102, Statistical Analysis; PSY-PC 2110, Introduction to Statistical Analysis; PSY-PC-2250, Cognitive Aspects of Human Development; PSY-PC-2300, PSY-PC-Social and Emotional Context of Cognition; PSY-PC-2550, Adolescent Development; PSY-PC-3650, Advanced Topical Seminar (approval dependent upon topic).

SOCIOLOGY: 1010, 1010W, Introduction to Sociology; 1020, 1020W, Contemporary Social Issues; 1111, First-Year Writing Seminar (as appropriate); 2100, Statistics for Social Scientists; 3002, Introduction to Social Research; 3003, Research Practicum; 3301, Society and Medicine; 3303, Social Dynamics of Mental Health; 4961, Seminars in Selected Topics (as appropriate). **Only one of SOC 1010 or 1020 may be counted towards the major or minor.*

CONCENTRATION D: Inequality, Intersectionality, and Health Justice

AFRICAN AMERICAN AND DIASPORA STUDIES: 1016, Race Matters; 1111, First-Year Writing Seminar (as appropriate); 3214, Black Masculinity: Social Imagery and Public Policy.

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2213W, Food, Identity, and Culture; 2342, Biology of Inequality; 3120, Sociocultural Field Methods (as appropriate); 3144, Politics of Reproductive Health; 3343, Biology and Culture of Race; 3345, Genetics in Society; 3890, Special Topics (as appropriate); 4345, Human Evolutionary Genetics.

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2268, Gender, Race, Justice, and the Environment.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 3040, Health and the African American Experience.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3221, Health Service Delivery to Diverse Populations.

MEDICINE, HEALTH, AND SOCIETY: 1940, Racial and Ethnic Health Disparities; 2230, Masculinity and Men's Health; 2240, Bionic Bodies, Disability Cultures; 2330, Men's Health Research and Policy; 2940, Race, Citizenship, and Health; 3000, Undergraduate Seminar (as appropriate); 3030, Community Health Research; 3040, Designing Healthy Publics; 3890, Special Topics (as appropriate).

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3301, Society and Medicine; 3304, Race, Gender, and Health; 3306, Gender and Medical Work; 3321, Population and Society; 3723, Gender, Sexuality, and the Body; 4961, Seminars in Selected Topics (as appropriate).

CONCENTRATION E: Medicine, Humanities, and Arts

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 2370, Death and the Body; 3141, Anthropology of Healing; 3142, Medicine, Culture, and the Body; 3143, Medical Anthropology; 3345, Genetics in Society.

ASIAN STUDIES: 2630, Chinese Medicine.

COMMUNICATION STUDIES: 3750, Rhetoric of the Body.

ENGLISH: 1111, First-Year Writing Seminar (as appropriate); 3720, 3720W, Literature, Science, and Technology (as appropriate); 3730, Literature and the Environment: Contemporary Climate Fiction; 3891, Special Topics in Creative Writing (as appropriate).

GENDER AND SEXUALITY STUDIES: 1111, First-Year Writing Seminar (as appropriate); 2267, Seminar on Gender and Violence; 2612, Lesbian, Gay, Bisexual, and Transgender Studies.

HISTORY: 1111, First-Year Writing Seminar (as appropriate); 2160, Medicine in Islam; 2800, Modern Medicine; 2810, Women, Health, and Sexuality; 2835, Sexuality and Gender in the Western Tradition to 1700; 2840, Sexuality and Gender in the Western Tradition since 1700; 3040, Health and the African American Experience.

HISTORY OF ART AND ARCHITECTURE: 3140, Healing and Art in East Asia.

MEDICINE, HEALTH, AND SOCIETY: 1111, First-Year Writing Seminar: Medicine, Health, and the Body; 1960, Health Humanities; 2230, Masculinity and Men's Health; 2250, War and the Body; 2950, Healing Animals; 3000, Undergraduate Seminar (as appropriate); 3050W, Medicine and Literature; 3120, Medicine, Science, and Technology; 3150, Death and Dying in America; 3250, Perspectives on Trauma; 3450, Medical Illness Narratives; 3890, Special Topics (as appropriate); 4010, Psychiatry, Culture, and Globalization; 4050, Narrative and Medicine: Stories of Illness and the Doctor-Patient Relationship.

PHILOSOPHY: 1008, 1008W, Introduction to Medical Ethics; 1111, First-Year Writing Seminar (as appropriate); 3606, 3606W, Moral Problems; 3608, Ethics and Medicine; 3630, Philosophy of Mind.

RELIGIOUS STUDIES: 3941, Religion, Science, and Evolution: Psychology of Religious Myth and Ritual.

SOCIOLOGY: 1111, First-Year Writing Seminar (as appropriate).

SPANISH: 4760, Literature and Medicine.

OTHER ELECTIVES

In addition to the electives listed below, any course from the above concentration areas may serve as an elective if it is not already being used to satisfy a concentration requirement. No more than 12 hours of courses with an asterisk in the list below may be used to satisfy the major. Courses with an asterisk may not be used to satisfy the minor. (Please consult the director of undergraduate studies for approval of “as appropriate” courses for electives.)

ANTHROPOLOGY: 1111, First-Year Writing Seminar (as appropriate); 1301, Introduction to Biological Anthropology; 3372, Human Osteology; 4373, Health and Disease in Ancient Populations.

BIOLOGICAL SCIENCES: *1510–1511, Introduction to Biological Sciences; *2520, Biochemistry.

CHEMISTRY: *2221–2222, Organic Chemistry; *2211–2212, Organic Chemistry for Advanced Placement Students.

HUMAN AND ORGANIZATIONAL DEVELOPMENT (PEABODY): 3342, Introduction to Community Psychology (same as PSY-PC); 3890, Health Promotion Delivery.

MATHEMATICS: 1011, Probability and Statistical Inference; 2810, Probability and Statistics for Engineering; 2820, Introduction to Probability and Mathematical Statistics.

MEDICINE, HEALTH, AND SOCIETY: 1001, Commons Seminar; *1500, Introduction to Microbiology; *1600, Introduction to Nutrition and Health for a Changing World; *3101–3102, Anatomy and Physiology; 3831, Service Learning Research and Readings (Note: 3831, Service Learning Research and Readings, must be taken concurrently with 3830); 3850, Independent Study; 3881, Internship Readings and Research (Note: 3881, Internship Readings and Research, must be taken concurrently with 3880).

PHILOSOPHY: 1111, First-Year Writing Seminar (as appropriate); 3606, 3606W, Moral Problems; 3630, Philosophy of Mind.

PSYCHOLOGY: 1111, First-Year Writing Seminar (as appropriate); 3600, Personality; 3610, Introduction to Clinical Psychology OR PSY-PC-3200, Introduction to Clinical Psychology; 3615, Emotion; PSY-PC-1205, PSY-PC-1207, Minds, Brains, Cultures, and Contexts; PSY-PC-2400, Social and Personality Development; PSY-PC-2500, Infancy; PSY-PC-2550, PSY-PC-3650, Advanced Topical Seminar (as appropriate).

SOCIOLOGY: 4961, Seminars in Selected Topics (as appropriate).

Course descriptions can be found in the courses section of this catalog.

Nanoscience and Nanotechnology

DIRECTORS Paul E. Laibinis, Sandra J. Rosenthal

FACULTY in the School of Engineering and the College of Arts and Science offer an interdisciplinary minor in nanoscience and nanotechnology. The minor is administered by the School of Engineering in collaboration with the College of Arts and Science.

Nanoscience and nanotechnology are based on the ability to synthesize, organize, characterize, and manipulate matter systematically at dimensions of ~1 to 100 nm, creating uniquely functional materials that differ in properties from those prepared by traditional approaches. At these length scales, materials can take on new properties that can be exploited in a wide range of applications such as for solar energy conversion, ultra-sensitive sensing, and new types of vaccines. These activities require the integration of expertise from various areas of science and engineering, often relying on methods of synthesis, fabrication, and characterization that are beyond those encountered in an individual course of study.

Students who minor in nanoscience and nanotechnology learn the principles and methods used in this rapidly growing field. Its core originates in the physical sciences by providing key approaches for describing the behavior of matter on the nanoscale. Synthetic approaches are used to manipulate matter systematically, for creating uniquely functional nanomaterials that can be inorganic, organic, biological, or a hybrid of these. With a third component of characterization, a process for designing systems to have particular properties as a result of their composition and nanoscale arrangement emerges. Students are introduced to these areas through foundational and elective courses for the minor that are specified below, the latter of which can be selected to fulfill the degree requirements for their major. The minor in nanoscience and nanotechnology is supported by the Vanderbilt Institute of Nanoscale Science and Engineering (VINSE) that brings together faculty from the College of Arts and Science, the School of Engineering, and the Medical Center. A specialized laboratory facility maintained by VINSE provides students in the minor with capstone experiences that allow them to prepare and characterize a variety of nanostructured systems using in-house state-of-the-art