The Department of Health Sciences in the Bouvé College of Health Sciences at Northeastern University provides a unique, transdisciplinary setting that incorporates instruction, research, and practice and seeks to prepare students for a wide range of career paths. The department offers a bachelor’s degree in Health Sciences and options for combined majors with the D’Amore-McKim School of Business, the College of Social Sciences and Humanities, the College of Science, the College of Engineering, and the Khoury College of Computer and Information Science, in addition to minors in exercise science, global health, nutrition, health research methods, and health science. We also offer several graduate degrees: Master of Public Health, Master of Science in Exercise Science, and a combined master in the two fields. We also collaborate with the Khoury College of Computer Science to offer a Master of Science in Health Informatics, as well as combined graduate degrees with the School of Pharmacy, the Physician Assistant Program, and the School of Law. At the doctoral level, we offer a PhD in Population Health and, in cooperation with Khoury, a PhD in Personal Health Informatics. Finally, we offer a Graduate Certificate in Exercise Science for Clinicians.

Our diverse faculty has expertise in the fields of population health, health disparities, nutritional epidemiology, social epidemiology, exercise science, medical sociology, public policy, personal health technologies, neurodevelopmental disorders, environmental occupational and mental health, among many more. Students have the opportunity to work side by side with faculty in conducting cutting-edge research in these fields. We also have research staff highly skilled in providing unique, specialized dietary assessment services.

In line with Northeastern’s commitment to interdisciplinary research and urban engagement, we teach and work closely with many other schools, centers, and departments in the university, including the Institute for Health Equity and Social Justice Research (IHESJR), the Center for Community Health Education and Service (CCHERS), the Social Science Environmental Health Research Institute (SSEHRI), and the Center for Health Policy and Healthcare Research (CHPHR), as well as community agencies and neighborhood health centers in the local Boston area and beyond.

**Programs**

**Bachelor of Science (BS)**
- Health Science (https://catalog.northeastern.edu/undergraduate/health-sciences/health-science-bs/)
- Data Science and Health Science (https://catalog.northeastern.edu/undergraduate/computer-information-science/computer-information-science-combined-majors/data-science-health-science-bs/)
- Health Science and Business Administration (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/health-science-business-administration-bs/)
- Health Science and Sociology (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/health-science-sociology-bs/)
- Health Science and Psychology (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/health-science-psychology-bs/)
- Environmental Engineering and Health Science (https://catalog.northeastern.edu/undergraduate/engineering/civil-environmental/environmental-engineering-health-sciences-bsenve/)

**Minors**
- Health Science (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/health-science-minor/)
- Health Research Methods (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/health-research-methods/)
- Exercise Science (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/exercise-science-minor/)
- Global Health (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/global-health-minor/)
- Nutrition (https://catalog.northeastern.edu/undergraduate/health-sciences/health-sciences/nutrition-minor/)

**Accelerated Programs**

See Accelerated Bachelor/Graduate Degree Programs (https://catalog.northeastern.edu/undergraduate/health-sciences/accelerated-bachelor-graduate-degree-programs/#programstext)

**Courses**

**Health Science Courses**

Search HSCI Courses using FocusSearch (https://catalog.northeastern.edu/class-search/?subject=HSCI/)

HSCI 1000. College: An Introduction. 1 Hour.
Provides an introduction to the University, college, and health professions to enhance students’ understanding of self and the decisions they make academically and socially as members of the University’s diverse, multicultural community. Group activities and individual assignments along with active participation in a learning community help students adjust to life on an urban campus, develop a better understanding of the learning process, acquire essential academic skills, and make connections with the faculty and students in the college.
HSCI 1105. Human Nutrition. 4 Hours.
Examines the fundamental role of nutrition in promoting health and how lifestyle and the socioecological model work together. Covers the physiological functions of energy-providing nutrients in the body and interrelationships, including the key functions of macronutrients and micronutrients. Introduces the use of two different diet assessment tools to assist individuals in selecting food for health promotion. Offers students an opportunity to gain a deeper understanding of what it means to make healthy choices and the role nutrients have on a person's wellness.

HSCI 1106. Contemporary Issues in Nutrition. 4 Hours.
Explores the fundamental role of nutrition in promoting health. Offers an overview of nutrient functions, compositions, and digestion/absorption. Relates concepts covered in class to current topics of interest in nutrition. Offers students an opportunity to discuss their dietary behaviors in relation to the Dietary Guidelines for Americans.

HSCI 1107. Nutrition Service Learning. 4 Hours.
Offers an introductory human nutrition course exploring the fundamental role of nutrition in promoting health. Discusses the essential nutrient functions, composition, and digestion/absorption. Utilizes principles from the humanities and sciences in developing nutrition concepts. Explains food nutrition labeling and presents its role in assisting the public with food selection. Emphasizes the relevance of food choices throughout life and their impact on long-term health. Engages students in hands-on service roles. Offers students an opportunity to learn and apply course concepts while addressing the needs/interests identified by community partners. This activity involves planning and participating with after-school programs providing nutrition workshops.

HSCI 1990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

HSCI 2000. Professional Development for Bouvé Co-op. 1 Hour.
Introduces students to the Bouvé Cooperative Education Program and provides them with the opportunity to develop job-search and career-management skills. Offers students an opportunity to perform assessments of their workplace skills, interests, and values and discuss how they impact personal career decisions. Students also have an opportunity to prepare a professional-style résumé, learn proper interviewing techniques, and gain an understanding of the opportunities available to them for co-op. Introduces career paths, choices, and career decision making. Familiarizes students with workplace issues relative to their field of study and teaches them to use myNEUCOOL database in the job-search and referral process. Presents and discusses co-op policies, procedures, and expectations of the Bouvé Cooperative Education Program and co-op employers.

HSCI 2350. Advanced Nutrition in Health and Disease. 4 Hours.
Designed for health professionals to increase their knowledge and skills in advanced nutrition in health and disease. Builds on a foundation of nutrition and introduces nutrients and their physiological impacts, including the nutritional guidelines for good health and disease prevention. Through case studies, offers students an opportunity to interpret nutrition in the prevention and treatment of diet-related health problems, such as obesity, diabetes, and cardiovascular disease.

HSCI 2500. Public Health Nutrition in the Community. 4 Hours.
Explores the role nutrition plays in promoting and improving health in the community. Examines modern aspects of public health nutrition in the healthcare system by applying the principles of nutrition to design policies, behavior, program planning, food insecurity, marketing, and children and adult nutrition programs. Offers students an opportunity to develop and deliver nutrition education to various populations in the community, including school-age children, college students, and the elderly population.

HSCI 2850. Special Topics. 4 Hours.
Offers students an opportunity to participate in a small seminar to explore selected topics within the vast subject of healthcare. May be repeated up to two times.

HSCI 2990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

HSCI 2991. Research in Health Science. 1-4 Hours.
Offers an opportunity to conduct introductory-level research or creative endeavors under faculty supervision.

HSCI 3990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

HSCI 4700. Health Science Capstone Introduction. 0 Hours.
Offers students an opportunity to integrate their course work, knowledge, and experiences to develop a proposal for a health science capstone project. The project is either research based or service based and is a culminating experience in the health science program. Upon completion and approval of the proposal, the student works with a mentor or mentors to implement their project in HSCI 4720 or HSCI 4730.

HSCI 4720. Health Science Capstone—Service. 4 Hours.
Offers students an opportunity to integrate their course work, knowledge, and experiences into a project that results in a written report and presentation regarding an issue within the field of health or healthcare. The project is a culminating experience in the health science program. Includes working with a mentor in a field experience in public health education or health policy, public affairs, social service, or other healthcare environment in which the student is qualified. Requires students to present their projects to the seminar class and possibly to the agency or group with which they are working.

HSCI 4730. Health Science Capstone—Research. 4 Hours.
Offers students an opportunity to integrate their course work, knowledge, and experiences into a project that results in a written report and presentation regarding an issue within the field of health or healthcare. The project is a culminating experience in the health science program. Requires students to present their projects to the seminar class and possibly to present a poster at a professional/research expo.

HSCI 4700. Health Science Capstone Introduction. 0 Hours.

HSCI 4720. Health Science Capstone—Service. 4 Hours.

HSCI 4730. Health Science Capstone—Research. 4 Hours.

HSCI 4750. Junior/Senior Honors Project 1. 4 Hours.
Focuses on in-depth project in which a student conducts research or produces a product related to the student’s major field. Combined with Junior/Senior Project 2 or college-defined equivalent for 8 credit honors project. May be repeated without limit.
HSCI 4971. Junior/Senior Honors Project 2. 4 Hours.
Focuses on second semester of in-depth project in which a student conducts research or produces a product related to the student's major field. May be repeated without limit.

HSCI 4983. Topics. 4 Hours.
Offers students an opportunity to study contemporary issues in healthcare and to expand their breadth of knowledge and engage diverse perspectives.

HSCI 4990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

HSCI 4991. Research. 4 Hours.
Offers an opportunity to conduct research under faculty supervision.

HSCI 4992. Directed Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic. Course content depends on instructor. May be repeated without limit.

HSCI 4993. Independent Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic. Course content depends on instructor. May be repeated without limit.

HSCI 4994. Internship. 4 Hours.
Offers students an opportunity for internship work. May be repeated without limit.

HSCI 5230. Clinical Nutrition Applications in Health and Disease. 3,4 Hours.
Prepares health professionals to effectively communicate principles of diet and nutrition to their clients and the public. Covers public health promotion strategies, techniques used to teach diet and nutrition, and behavioral theories used in diet and nutrition intervention. Emphasizes clinical applications for the treatment of weight disorders, diabetes, cardiovascular disease, eating disorders, and nutrition in the life cycle.

HSCI 6962. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

Cardiopulmonary and Exercise Sciences Courses
Search EXSC Courses using FocusSearch (http://catalog.northeastern.edu/class-search/?subject=EXSC/)

EXSC 1120. Introduction to Exercise, Fitness, and Health. 4 Hours.
Explores the fundamental role of exercise and fitness in health. Introduces principles of exercise and various components of fitness and wellness. Discusses the development of basic exercise prescription for cardiorespiratory endurance, muscular strength, and endurance and flexibility. Includes discussions on a wide range of research topics, including advances and innovations in health and fitness and practices that lead to more healthful living.

EXSC 2991. Research in Exercise Science. 1-4 Hours.
Offers an opportunity to conduct introductory-level research or creative endeavors under faculty supervision.

EXSC 4500. Exercise Physiology 1. 4 Hours.
Introduces exercise physiology. Covers the muscular, neuromuscular, cardiovascular, ventilatory, endocrine, and metabolic responses to acute exercise and the physiological adaptations to chronic exercise and physical activity. Basic concepts related to physical fitness, body composition, weight control, and training principles are discussed.

EXSC 4501. Lab for EXSC 4500. 1 Hour.
Accompanies EXSC 4500. Offers experiments in the exercise physiology laboratory that introduce concepts related to the lecture content of the course and include techniques such as strength testing, ergometry, graded exercise testing, indirect calorimetry, and body composition assessment.

EXSC 4990. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

EXSC 5200. Cardiopulmonary Physiology. 3 Hours.
Offers students an opportunity to gain an understanding of physiological principles of the cardiopulmonary system. This advanced course covers (1) the structure and functional operation and regulation of the cardiopulmonary system; (2) disease-associated physiological changes and cardiopulmonary dysfunction; and (3) exercise-induced acute responses and physiological adaptations of the system and their applications to chronic cardiopulmonary diseases. Encourages students to integrate their knowledge of exercise and physical activity with cardiopulmonary health and fitness, as well as cardiopulmonary disease prevention and treatment. Restricted to graduate students in exercise science and undergraduate studentsminoring in exercise science.

EXSC 5210. Physical Activity and Exercise: Prescription, Measurement, and Testing. 3 Hours.
Studies the general principles of physical activity and exercise prescription, measurement, and testing. Offers students an opportunity to learn the fundamental concepts and techniques to measure physical activity, exercise, and related testing procedures through a hands-on approach. Topics include the use of questionnaires and activity monitors to measure physical activity; measurement of body composition, fitness, muscular strength, and endurance; and clinical exercise testing. The fundamental concepts of exercise prescription and use of measurement techniques taught in this course are applicable to careers in physical therapy, exercise physiology, and as a physician assistant. Requires prior completion of EXSC 4500 or equivalent undergraduate course or permission of instructor.

EXSC 5220. Advanced Exercise Physiology. 3 Hours.
Covers the advanced study of concepts, principles, and research in the field of exercise physiology. Discusses advanced concepts in the muscular/neuromuscular, cardiovascular, ventilatory, endocrine, and metabolic responses to exercise and exercise training. Specific study of the physiological control mechanisms regulating these systems are also addressed during periods of rest, acute exercise, and following chronic exercise training.

EXSC 5230. Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease. 3 Hours.
Seeks to provide a foundation for understanding the benefits of physical activity and exercise and the detrimental effects of physical inactivity and sedentary behavior on musculoskeletal health. Studies the function/dysfunction of the musculoskeletal systems resulting in common/uncommon disorders and the prevalence, etiology, and benefits of physical activity/exercise. Students apply previously learned exercise physiology principles, such as exercise prescription and neural and motor control adaptations, to physical activity and exercise. Discusses key physiological mechanisms underlying common/uncommon musculoskeletal disorders. Examines the preventive and beneficial effects of physical activity and exercise endorsed by the American College of Sports Medicine. Restricted to graduate students in exercise science and to undergraduate students minoring in exercise science.
EXSC 5976. Directed Study. 1-4 Hours.
Offers independent course work under the direction of members of the department on chosen topics. Requires submission of a written proposal to the program adviser prior to the intended semester. May be repeated without limit.

EXSC 5978. Independent Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic. Course content depends on instructor. May be repeated without limit.

Public Health Courses
Search PHTH Courses using FocusSearch (http://catalog.northeastern.edu/class-search/?subject=PHTH/)

PHTH 1120. Society and Health. 4 Hours.
Applies social scientific perspectives to the study of health, illness, and healthcare. Explores the ways that societal factors such as race, class, and gender interplay with health, healthcare, and health disparities. Studies neighborhoods and social networks in relation to health. Introduces basic sociological concepts relevant for the study of health and healthcare, such as social construction and medicalization. Offers students an opportunity to develop critical assessment skills while exploring a range of explanations for why, despite having the most expensive healthcare system, the United States ranks comparatively low in life expectancy and health and well-being outcomes. Uses lectures, case-based learning, and small-group workshops to explore the ways that our social environment shapes health in contemporary U.S. society. PHTH 1120 and SOCL 1120 are cross-listed.

PHTH 1260. The American Healthcare System. 4 Hours.
Introduces the organization and dynamics of the healthcare system and the role of consumers. Explores basic elements of healthcare including financing, personal insurance, high-risk status, and patient rights within the context of the U.S. system. Central to this exploration is an analysis of healthcare issues requiring informed consent from patients: patient bill of rights, healthcare directives, and the use of a proxy for decision making. Introduces the roles and responsibilities of various healthcare workers within the framework of an interdisciplinary model of healthcare.

PHTH 1261. Comparative Healthcare Systems. 4 Hours.
Designed to enable health profession students to develop a basic understanding of health-delivery systems and key issues confronting healthcare in the United States and in the study country in this study-abroad course. Explores issues such as the affordability of medical care, patient rights, health risks and behaviors, disease prevention, quality and access to care, the growth of managed care and corporate influence on healthcare, new medical technologies, the aging population, the impact of biotechnology, and trends in employment of health professionals. Incorporates self- and group-reflection exercises, Internet and contemporary media exploration, and in-class discussions. Compares and contrasts key healthcare issues in the study country with those in the United States using literature, Internet and contemporary media, observations in the study country, and discussions with guest speakers.

PHTH 1270. Introduction to Global Health. 4 Hours.
Introduces global health in the context of an interdependent and globalized world focusing on four main areas of analysis: infrastructure of global health; diseases; populations; and terms, concepts, and theories. While the focus is on lower-income countries, the course examines issues in a broader global context, underscoring the interconnections between global health disparities and global health policy response. Applies case studies describing interventions to improve healthcare in resource-poor settings in sub-Saharan Africa and elsewhere to help illuminate the actors, diseases, populations, and principles and frameworks for the design of effective global health interventions. AFRS 1270 and PHTH 1270 are cross-listed.

PHTH 2210. Foundations of Biostatistics. 4 Hours.
Introduces the fundamental concepts of biostatistics. Offers students an opportunity to learn to apply statistical thinking to practical problems across several health disciplines. Draws examples and readings from clinical and public health literature. Introduces the Stata statistical software package.

PHTH 2211. Recitation for PHTH 2210. 0 Hours.
Offers small group discussion format to cover material in PHTH 2210.

PHTH 2300. Communication Skills for the Health Professions. 4 Hours.
Offers students in the health professions an opportunity to learn how to communicate effectively with patients, colleagues, and other professionals. Covers interpersonal communication with patients and families from culturally diverse backgrounds, public speaking and presentations, and communicating as a leader. Requires students to create/prepare and deliver several presentations throughout the semester.

PHTH 2301. Communication Skills for the Health Professions—Global. 4 Hours.
Studies how to communicate effectively with patients, colleagues, and other professionals—regardless of race, culture, or ethnicity—on interpersonal, organizational, and global levels. Introduces traditional and new media health communication strategies, public speaking/presentation techniques, and communication as leaders in a global environment. Compares cultures and healthcare systems in the country of study with the American system by engaging with health professionals, patients, caregivers, and communications and other specialists. Introduces students to art and techniques of health communication for informing and influencing patients, caregivers, and the community-at-large. Offers students in the health professions an opportunity to learn interpersonal, organizational, mass media, and global communication skills to empower individuals to become health literate and participate in their own healthcare. May be repeated without limit.

PHTH 2350. Community and Public Health. 4 Hours.
Provides students with a basic familiarity with and appreciation of public health and community-based methods for improving the health of populations. Explores the purpose and structure of the U.S. public health system, contemporary public health issues such as prevention of communicable diseases, health education, social inequalities in health and healthcare, public health responses to terrorism, and control of unhealthy behaviors like smoking, drinking, drug abuse, and violence.
PHTH 2351. Community and Public Health - Global. 4 Hours.
Offers a basic familiarity with (and appreciation of) public health and community-based methods for improving the health of populations in a global context. Discusses the purposes and structures of the public health systems of the United States and the host country. Explores contemporary public health issues, including the global burden of disease; social determinants of inequalities in health and healthcare; communicable disease detection and management; environmental health risks; nutrition and physical activity; and unhealthy behaviors, such as substance use and violence. Analyzes the application of public health practices and principles to urban health concerns through the use of comparative case studies.

PHTH 2414. Environmental Health. 4 Hours.
Offers an overview of the field of environmental health, with focus on what the National Institute of Environmental Health Sciences terms “environmental public health.” This broad field increasingly involves transdisciplinary approaches that use social science/environmental health collaborations, and it includes the physical, built, and social environments. Asks students to think critically about the economic, scientific, social, and political factors that shape environmental health and to consider how the field is relevant to other public health issues.

PHTH 2515. Healthcare Policy and Administration. 4 Hours.
Focuses on management and policy issues in healthcare. Discusses management and administrative structures in hospitals and other healthcare organizations, including community clinics and health organizations, both private and public. Introduces the financial systems, economic information, and payment mechanisms necessary to understand healthcare financing. Also explores the variety of factors that influence population health from a healthcare policy perspective. Offers students an opportunity to learn how to analyze, prepare, and write policy briefs based on understanding the various economic, legal, and political forces shaping healthcare in the United States.

PHTH 2949. Research Ethics Training. 0 Hours.
Indicates successful completion of research ethics training at the undergraduate level. .

PHTH 2991. Research in Public Health. 1–4 Hours.
Offers an opportunity to conduct introductory-level research or creative endeavors under faculty supervision.

PHTH 3210. Using Data in Health Research. 2 Hours.
Uses health data to explore and understand the underlying structures of widespread health issues. Accessing and understanding data is crucial to evaluate the impact of an intervention, to determine barriers to care, and to provide foundations for health recommendations and decisions. Introduces students to the principles and common techniques used to access, explore, interpret, and present health data. Offers students an opportunity to learn the essential concepts, techniques, and tools needed to work with data in health research. Focuses on the understanding of the core concepts and principles and their application to health data used in research. Uses Excel extensively to demonstrate these approaches. .

PHTH 3250. Fundamentals of Qualitative Research. 4 Hours.
Discusses the role of qualitative research in topics related to healthcare delivery and public health practice. Qualitative research aims to achieve in-depth and contextualized understanding of people, cultures, and societies and usually employs texts, interviews, archival materials, and focus group discussions as sources of data. Describes all stages of a research project, from the initial selection of a topic, through data collection, data analysis, and presentation of results. Surveys the research design approaches most commonly used in healthcare settings, public health agencies, and human service organizations. Students formulate a research question, develop an appropriate research plan, and describe how best to collect or access relevant data. Offers students an opportunity to learn how to assess the rigor and generalizability of qualitative research.

PHTH 4120. Global Perspectives on Discrimination and Health. 4 Hours.
Explores how discrimination can lead to population-level health disparities among marginalized groups globally. Topics include constructions of social categories, such as race and gender; differences in patterns of disease across populations, both intra- and internationally; how work from various disciplines, such as anthropology, medicine, and public health, inform understanding about how discrimination relates to health; and theoretical models from different disciplines that explain public health disparities.

PHTH 4202. Principles of Epidemiology in Medicine and Public Health. 4 Hours.
Introduces the principles of epidemiology necessary to critically evaluate the published research in medicine, public health, and related fields. Through careful reading of literature, class discussion, and lectures, familiarizes students with the study of design-related considerations that are an indispensable part of interpreting scientific literature. Offers students an opportunity to learn how to recognize critical elements of research design and execution (e.g., loss to follow-up in randomized clinical trials and other cohort designs, selection bias in case control studies, etc.); identify the strengths and limitations of different approaches to research questions; deepen their understanding of causal inference; and recognize the provisional nature of scientific knowledge. Covers issues of statistical methods and data analysis; however, there are no computational requirements. .

PHTH 4511. Healthcare Management. 4 Hours.
Provides an opportunity to develop skills and abilities related to management within the context of interdisciplinary study. Students explore issues in healthcare management in small-group, case-based educational experiences or problem-solving approaches. Within the context of small groups, students explore complex problems frequently encountered in clinical practice. Group projects related to leadership, management, or administrative issues are pursued and developed as classroom or poster presentations.

PHTH 4515. Critical Issues in Health and Public-Health Policy. 4 Hours.
Explores public policy issues and their relation to U.S. healthcare reform. Emphasizes passage of the Affordable Care Act (ACA) and ongoing challenges in the public health arena. Uses historical, political, ethical, and other critical lenses to analyze a century of evolving U.S. healthcare reform efforts and the status of ACA implementation and to assess tensions between scientific, government, and broader public perspectives about current public health policy concerns. Explores the role of harm-reduction strategies, the impact of bioterror and emergency preparedness, privacy and other challenges of disease surveillance and population health-data collection, conflict regarding alternative strategies for infectious and chronic disease management, and the implications of the ACA for the future of public health.
PHTH 4540. Health Education and Program Planning. 4 Hours.
Offers a writing-intensive course that introduces concepts central to health education and the program-planning process. Examines current public health issues that require intervention through health education or other types of prevention programs. Studies and applies models and theories used in health education and program planning. Offers students an opportunity to conduct a needs assessment; design and plan a program for a public health issue; create a mission statement for the program as well as goals, objectives, and strategies; and design the intervention, develop an evaluation plan, and create a budget and marketing plan.

PHTH 4993. Independent Study. 1-4 Hours.
Offers students an opportunity to carry out independent work under the direction of members of the department on a chosen topic. Course content depends on instructor. May be repeated without limit.

PHTH 5120. Race, Ethnicity, and Health in the United States. 3 Hours.
Explores the role of economic, social, and individual factors in explaining racial and ethnic health disparities and examines intervention approaches to eliminate them. Topics include genetic and social constructions of race and ethnicity, measuring race and ethnicity, and the differences in prevalence and patterns of disease across groups; cultural and structural factors that affect healthcare delivery, such as discrimination, racism, and health status; and public health approaches to prevention and improving healthcare delivery.

PHTH 5202. Introduction to Epidemiology. 3 Hours.
Introduces the principles, concepts, and methods of population-based epidemiologic research. Offers students an opportunity to understand and critically review epidemiologic studies. Lectures and discussions aim to serve as a foundation for training in epidemiology, quantitative methods, and population-based health research. The course is a required introductory course for students in the Master of Public Health program and is appropriate for students who are interested in epidemiologic research. Students not meeting course restrictions may seek permission of instructor.

PHTH 5210. Biostatistics in Public Health. 3 Hours.
Offers public health students an opportunity to obtain the fundamental concepts and methods of biostatistics as applied predominantly to public health problems and the skills to perform basic statistical calculations. Emphasizes interpretation and comprehension of concepts. Topics include descriptive statistics, vital statistics, sampling, estimation and significance testing, sample size and power, correlation and regression, spatial and temporal trends, small area analysis, and statistical issues in policy development. Draws examples of statistical methods from the public health practice. Introduces use of computer statistical packages. Requires permission of instructor for students outside designated programs.

PHTH 5212. Public Health Administration and Policy. 3 Hours.
Offers students an opportunity to obtain practical knowledge concerning the planning, organization, administration, management, evaluation, and policy analysis of health programs. Surveys what we know and think about public health administration and policy and what we do in practice. Introduces the main components of public health policy and administration using notable conceptual frameworks and case studies. Requires permission of instructor for students outside designated programs.

PHTH 5214. Environmental Health. 3 Hours.
Introduces the field of environmental health, which encompasses concerns related to physical, built, and social environments. Discusses the tools used to study environmental exposures and diseases. Examines environmental health hazards, the routes by which humans are exposed to hazards, various media in which they are found, and disease outcomes associated with exposures. Offers students an opportunity to become familiar with methods used to conduct environmental health research and with the federal and state agencies responsible for protecting environmental health.

PHTH 5222. Health Advocacy. 3 Hours.
Seeks to educate students about the role of advocacy in public health while providing tools and support to address current healthcare issues. Provides information and theory about advocacy, education, and community organizing in public health practice and skills geared toward direct application. Covers various techniques related to developing and conducting an advocacy project within a community setting. Offers students an opportunity to develop, communicate, and refine a community-based advocacy program. Requires permission of instructor for students outside designated programs.

PHTH 5226. Strategic Management and Leadership in Healthcare. 3 Hours.
Focuses on management challenges facing healthcare organizations, particularly community-based agencies and their role in the public healthcare delivery system. Introduces strategic thinking and leadership approaches that must be considered for managing a successful healthcare organization. Selected topics include strategic planning, organizational development and the barriers to organizational change; relationship management with key internal and external constituencies; marketing, financial management, and contract negotiation; evolving principles of health insurance and the changing role of the consumer; and the key elements for effective organizational leadership in today’s evolving healthcare marketplace. When appropriate, outside experts are used to supplement readings, case studies, and lecture and discuss practical real-world challenges in leading various healthcare initiatives. Requires permission of instructor for students outside designated programs.

PHTH 5230. Global Health. 3 Hours.
Presents an overview of global health issues and focuses on less economically developed countries. Covers measures of disease burden; demography of disease and mortality; Millennium Development Goals (under the auspices of the United Nations); infectious diseases such as HIV/AIDS, tuberculosis, and malaria and their prevention; vaccine utilization and potential implications; chronic diseases; tobacco-associated disease; nutritional challenges; behavioral modification; mother and child health; health human resources; and ethical issues in global health. LAW 7630 and PHTH 5230 are cross-listed.

PHTH 5232. Evaluating Healthcare Quality. 3 Hours.
Focuses on the conceptual and methodological foundations for evaluating the quality of care of healthcare providers—both individual providers and healthcare organizations. Aimed at students pursuing careers in public health, public policy, healthcare management, and the various health professions in the growing field of quality evaluation and improvement. Also designed to give healthcare providers an appreciation for how they may be evaluated. Examines scientific issues in the measurement of quality of care as well as key quality evaluation methods. Also covers the use of risk adjustment and other methodologies for comparing the quality of healthcare providers. Focuses on mechanisms that assess quality, including licensure, accreditation, and board certification.
PHTH 5234. Economic Perspectives on Health Policy. 3 Hours.
Uses basic economic concepts to illuminate the many factors that shape health, healthcare, and the healthcare system in the United States. Examines the role of these concepts in explaining the challenges faced in achieving three core goals of the healthcare system: increasing access, limiting cost, and improving quality. Explores how policy makers, market participants, and others can remedy access, cost, and quality deficiencies. Illustrates how economic concepts can be applied to the study of health and health behaviors.

PHTH 5236. Public Health Nutrition. 3 Hours.
Covers public health nutrition issues among individuals, communities, and populations living in urban settings. Emphasizes issues about vulnerable populations, such as ethnic minorities, women, children, and the elderly. Topics include food and nutrition science; evaluation of specific nutrition programs; and the understanding of the role of public health services, policies and legislation, funding, marketing, and communication strategies for the development, evaluation, implementation, and dissemination of nutrition programs. Briefly reviews international public health nutrition issues such as world hunger and food insecurity.

PHTH 5300. Project Management in Public Health. 1 Hour.
Presents principles of project management as applied to public health organizations and their programs. Offers students an opportunity to learn the components of the project management life cycle, including human resource components, material resources, and related components.

PHTH 5310. Budget Principles in Public Health. 1 Hour.
Details the public health revenue and funding environment, identifies key budget development functions, and describes the importance of utilizing the budget process for sound management of the programs. Public health programs in public agencies and nonprofit organizations require managerial skills to assure that programs are implemented efficiently and effectively. Funding for public health frequently comes from governmental revenue sources—federal and state budgets or grants from government or foundations. It is critical that the funds are utilized well and appropriate to the objectives of the agency and program. Advancing the environment for public health through effective budgeting and promotion of program impact is important to support the continued funding for public health. The course takes students through these topics and offers them the opportunity to gain the practical experience of developing a budget for a public health program as the central activity.

PHTH 5320. Grant Writing in Public Health. 1 Hour.
Explores the grant funding landscape, identifies different types of funders and grants, and identifies potential funders. Offers participants an opportunity to develop their skills in grant writing and in reviewing grants, to develop a grant proposal, and to understand the submission and peer review process.

PHTH 5330. Using Publicly Available Data in Public Health. 1 Hour.
Explores the sources of publicly available public health data and how best to utilize and communicate the data for public health programming. Good data provides the foundation for public health planning and evaluation. Finding data relevant to program planning, community assessment, and evaluation is made easier through use of the many public sources of data available. Offers students an opportunity to learn about the range of public data sources and apply the learnings to a public health topic.

PHTH 5340. Writing for Peer-Reviewed Journals in Public Health. 1 Hour.
Seeks to prepare public health students to develop and improve skills in scholarly writing and submitting manuscripts to peer-reviewed journals and to demystify the process of writing for publication. It is critical that program and policy interventions be reported for replication and contribution to the evidence base. Examines the process for preparing manuscripts for publication, types of publications, how to identify the appropriate journal, and navigating editorial decision and revision processes, including rules of the publishing process. Emphasizes journals focusing on public health practice and covers technical writing for other professional interests. Offers students an opportunity to bring ideas of programs and policy interventions or areas of timely professional interest for which they may be interested in developing a publication.

PHTH 5350. Using SAS in Public Health Research. 1 Hour.
Introduces students to the SAS statistical software system to manage, report, summarize, and analyze public health data. The SAS suite can be used to provide a broad analysis of different types of data. Public health research often requires one to access, manipulate, and analyze data sets relating to individuals, groups, or healthcare systems. Explores approaches in SAS to accessing data sets, data manipulation, working with multiple data sets, summarizing and reporting data, and analytic results. Includes various statistical methods and testing procedures, such as t-tests, chi-square tests, and linear regression, to illustrate applications of SAS. The second part of the course explores more advanced programming methods including SAS macros, using the Output Delivery System (ODS), and data arrays.

PHTH 5440. Community-Based Participatory Research: Environmental Health. 3 Hours.
Aims to prepare students for community-based participatory research (CBPR) through historical, theoretical, and methodological materials. Through visits with experienced CBPR researchers, studies the need for, benefits of, and challenges to community-grounded research. Uses the lens of local environmental justice issues to emphasize the importance of CBPR to environmental health and justice work. Offers students an opportunity to engage in hands-on labs, to develop research tools to study their own community as students, to critically analyze CBPR cases, and to develop their own strategic plan to research a pressing environmental health and justice issue through CBPR. Introduces students to critical studies of science and technology.

PHTH 5540. Health Education and Program Planning. 3,4 Hours.
Focuses on underlying concepts of health education and explores current health education issues that require intervention. Covers program planning models and theories used in health education. Offers students an opportunity to develop a working knowledge of the planning process for health education through the analysis of case studies and by creating a program plan to address a health issue of their choice. Provides health science students with preparation for HSCI 4710, in which they may choose to implement and evaluate their program plan.