UNDERGRADUATE PUBLIC HEALTH

Programs
Undergraduate
Major

Minor

Courses
Public Health Undergraduate (SPHU)

SPHU 1010 Intro To Public Health (3)
Students are introduced to the concepts and practice of public health in the U.S. and internationally by tracing its historical evolution. Classic public health problems and their resolution will be discussed in the context of the broader contemporary social environment. The latter part of the course is focused on public health practice in both the U.S. and developing countries, with a consideration of the structure, function, and financing of public health organizations. The many different roles for public health professionals in these organizations also are described.

SPHU 1020 Cell, Individual & Commu (3)
This course provides a foundation of knowledge about the human body in health and disease. It gives an overview of important concepts on the biological mechanisms of disease at the cellular, individual, and population/community levels. The course will focus on a natural progression in the development of health and disease, moving from a discussion of the cell, to the individual, and finally, to specific infectious or chronic disease states and processes. The role of the community in public health will be emphasized. This course is designed to provide a good foundation in the mechanisms of health and disease. Furthermore, each lecture will offer insights into current public health topics and research trends. Each lecture will address the following: 1) specific mechanisms of health and disease; 2) topics of special public health importance, and 3) a scientific update on research in the news.

SPHU 1890 Service Learning: SPHU 1010 (0-1)
Service Learning. Course may be repeated up to unlimited credit hours.

SPHU 1891 Service Learning: SPHU 1020 (1)
Service Learning.

SPHU 2016 Infectious Disease Outbreaks (3)
This course will introduce students to the operational pillars infectious disease outbreaks such as clinical management, logistics, infection prevention and control, policy and regulations. Students will begin with the basic concepts of infectious diseases, dynamics of disease transmission, and emerging and reemerging infectious diseases. The course encourages a wider conversation on the implications of infectious diseases in the broader context of public health, and challenges students to think creatively about solutions for prevention and control. Prerequisite(s): SPHU 1010* and 1020*.

Prerequisite(s): SPHU 1010* and 1020*.
* May be taken concurrently.

SPHU 2050 Arthropods and Public Health (3)
This course provides a broad introduction to insects and other arthropods that transmit infectious pathogens, or cause problems to humans through infestation or other contact. The impact of arthropods on the history of human civilization and development will be explored, as will their use as food and in art. Arthropod utilization in forensic science and for medicinal purposes will be discussed. Throughout the course the myriad adoptions utilized by arthropods, allowing them to become the most specious group of animals in existence, will be highlighted. Prerequisite(s): SPHU 1010* and 1020*.

Prerequisite(s): SPHU 1010* and 1020*.
* May be taken concurrently.
SPHU 2150 Foundations of Environ Health (3)
This course is designed to provide students with an introduction to and overview of key areas in environmental health. Using the perspectives of the population and community, the course will cover factors associated with the development of environmental health problems. Students will gain an understanding of the interaction of individuals and communities with the environment, the potential impact on health of environmental agents, and specific application of concepts of environmental health. The course consists of lectures that cover principles derived from core environmental health disciplines. The sequence begins with background material and "tools of the trade"; agents of environmental diseases; and applications and domains of environmental health. Prerequisite(s): SPHU 1010* and 1020*. * May be taken concurrently.

Prerequisite(s): SPHU 1010* and 1020*.
* May be taken concurrently.

SPHU 2220 Concepts of Health & Wellness (3)
This course provides a foundation of knowledge about the wellness movement - personal responsibility, behavior change and risk reduction - to introduce students to the health and wellness-related information they need to thrive in today's world. The course provides a balance among the seven dimensions of wellness while at the same time emphasizing the central roles of physical fitness, nutrition, avoidance of tobacco, and stress management as keys to a healthy life. Additional fitness and wellness topics include body composition, flexibility, safety, drugs, STDs, and chronic diseases. The course also provides scientifically based information on wellness topics, as well as assessment activities and other tools for encouraging behavioral change. Prerequisite(s): SPHU 1010* and 1020*. * May be taken concurrently.

Prerequisite(s): SPHU 1010* and 1020*.
* May be taken concurrently.

SPHU 2300 Introduction to Nutrition (3)
This course is designed to provide students with an introduction to the basic principles of nutrition science and research. It is recommended for undergraduate students who have not had a prior course in nutritional science. It is designed to help students gain basic knowledge about the roles of specific nutrients, with emphasis on their sources, functions, and metabolism in the human body, basic principles of digestion and absorption. Other topics include food selection for optimal health, energy balance and weight control, dietary practices in health promotion and chronic disease prevention, nutrition throughout the lifespan, and in introduction to public health nutrition including but not limited to food safety, food supply, food insecurity, and food policy.

SPHU 2333 Intro to Global MCH (3)
The course introduces undergraduate students to the complex public health problems that affect women and children in the USA and in developing countries. The course will introduce and use the socio-ecological framework and the life-course models to examine factors that determine women and children's health and disease. The foundation of the course is a comprehensive review of common health issues that affect pregnancy, children and teenagers worldwide. Programs and policy to address these issues will also be reviewed and discussed in the context of socio-ecological frameworks. Prerequisite(s): SPHU 1010* and 1020*. (* May be taken concurrently.)

Prerequisite(s): SPHU 1010* and 1020*.
* May be taken concurrently.

SPHU 2400 Global Health in Action (3)
This course is targeted towards students considering global health work. Using a "Best Practices" lens students will explore how to have a meaningful, field-based global health experience, and how to incorporate their global health experience into a future career. Students will examine policy issues and other health determinants in order to understand effective strategies to respond to health challenges in a global setting. As an outcome, students will approach global health in its wider social, economic and political context. Lectures, readings from primary literature, and field-based case studies, will provide the framework for discussion, analysis, and interpretation of global health in action. Prerequisite(s): SPHU 1010 and 1020*. * May be taken concurrently.

Prerequisite(s): SPHU 1010 and 1020*.
* May be taken concurrently.

SPHU 2810 Special Topics in Pub Health (1-3)
Special Topics in Public Health. Course may be repeated up to unlimited credit hours. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 2880 Writing Intensive: SPHU 2333 (1)
Writing Intensive.
SPHU 3010 Foundations of Health Care Sys (3,4)
This course develops conceptual and methodological skills for the design and implementation of public health policy. A solid grounding in systems theory will complement the use of practical management tools such as strategic planning, cost effectiveness analysis and decision analysis. Students will apply these concepts and tools within the context of current international and domestic policy frameworks in the field of public health. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3015 PH Program Implement & Mgmt (3)
This course develops practical skills for the design, implementation, and management of public health programs. A solid grounding in personal, financial, and organizational determinants of health and organizational effectiveness will complement the use of practical management tools and techniques such logic model development for program design and implementation. Students will apply these concepts and tools within the context of service delivery and policy-making in the field of public health. Prerequisite(s): SPHU 3110*. * May be taken concurrently.

Prerequisite(s): SPHU 3110*.

SPHU 3010 Social & Behavioral Perspectiv (3)
This class establishes a foundation of public health theories and their application to the social and behavioral determinants of health. These topics and theories are core to public health practice across disciplines. Students explore how the key determinants of health, such as race, gender, poverty, geography, affect the health status of the public. Students delve into the underlying theoretical or organizational explanation of determinants. Through this exploration students will identify appropriate behavior change theories to address health issues and learn how to select an intervention. Students are coached through a semester-long assignment to refine their skills in writing literature reviews, matching theories to determinants, and identifying and choosing an intervention. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3120 Issues & Strategies in PH (3)
This seminar-style course is designed to provide students with basic biological and social concepts, control practices, and policies underlying the epidemiology of diseases of global importance. This course investigates how culture, society and the environment influence disease transmission, risk factors, disease prevention and health status. The course will be transdisciplinary, emphasizing the connections between the biological nature of disease and the social, economic and political context that influences prevention and control practices. Examples of health topics that may be addressed are malaria, neglected tropical diseases, diabetes, and vaccine preventable diseases. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3160 Biostatistics in Public Health (3)
This course provides an overview of various statistical methods used in public health practice and research. Emphasis is on application of appropriate methods and interpretation of results. Examples and problems from public health settings will be included. Various statistical software will be used to analyze data (excel, SPSS and others), but prior computing experience is not required. Topics covered include methods of summarizing data and estimation and hypothesis testing techniques, including the t-test, the chi-square test, the analysis of variance, correlation analysis, and linear regression. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3170 Foundations of Epidemiology (3)
This course is designed to give students a general introduction to epidemiological concepts and basic tools of the field. The historic and current contributions made through the use of epidemiology in shaping our understanding of disease in populations will be described and investigated. The course will assist the student in establishing a foundation for the definition of and response to, public health challenges in the community as well as the global society. The course will introduce a number of areas of specialization within the field of epidemiology, including infectious and non-infectious diseases and other health issues. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3200 Nutrition & Chronic Disease (3)
This course will provide students the opportunity to explore the complex relationships between diet, obesity and chronic disease outcomes particularly cardiovascular disease and cancer. The emphasis of the course will be using evidence-based approaches to investigate relationships between diet and disease. We will review research from experts in areas related to nutrition. The course will focus on the causal pathway from diet and inactivity to obesity to negative chronic outcomes with overnutrition being the pivotal mechanism to disease. Students will explore current diet trends and learn practical skills around making food choices in addition to examining the current research on diet factors associated with chronic disease. Prerequisite(s): SPHU 3170 or 3170.

Prerequisite(s): SPHU 3170 or 3170.
SPHU 3330 Disasters & Environmental Hlth (3)
This course focuses on the complex intersection of population health and disasters through the lens of environmental health. Students will examine the impacts that disasters (natural and technological) have on environmental and human health, along with influences attributed to climate change. Case studies will be incorporated as a didactic and learning element of the course to highlight critical environmental health challenges, overall population health concerns, and associated impacts imposed by disasters.

Prerequisite(s): SPHU 1010, 1020 and 2150.

SPHU 3500 PH Approach to Sexual Violence (3)
This course provides an in-depth examination of sexual violence from a public health perspective. Theories of sexual violence, the epidemiology of sexual violence (scope, causes, risk factors, and consequences), and public health approaches to reducing sexual violence will be covered.

Prerequisite(s): SPHU 3110*. May be taken concurrently.

SPHU 3550 Lab Methods & Public Health (3)
This course focuses on laboratory methods and the opportunity to conduct hands-on, bioassay-based experiments. Students will work collaboratively throughout the semester to gain experience with the experimental process from hypothesis generation to interpretation and presentation of experimental results. This begins with learning how to read and evaluate scientific literature, designing experiments and then analyzing, interpreting, and presenting results through written and oral products. This curriculum is unlike that offered in typical laboratory courses. Students will experience, at the undergraduate level, methodologies specific to the expertise of TU's graduate Public Health faculty. Students will gain overarching skills that will provide them with hands-on experience with applied public health research methods.

SPHU 3600 Women's Repro & Obstetric Hlth (3,4)
This 3-credit course is geared toward public health undergraduate students with a strong interest in women and maternal health. The course has two distinct objectives. The first objective is to provide an overview of the pathophysiology of the female reproductive system and a survey of the complications of pregnancy, labor and delivery. The second objective is to explore medical and lay practices related to women gynecological and obstetric health, in USA and worldwide. Existing scientific evidences associated with these practices will be examined, along with ways to reconcile medical authoritative knowledge and women's autonomy. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 3700 Health & Human Rights in LatAm (3)
The course addresses health and human rights in Latin America from health equity, gender, and ethnicity perspectives. The main topics are: introduction to health and human rights and health equity, health and the rights of the child, sexual and reproductive health rights, health and human rights for indigenous and Afrodescendant populations, health and human rights in contexts of violence, the judicialization of healthcare access, social movements for the right to health, and the politics of health and human rights. The course contextualizes and analyzes: 1) health and human rights within its economic and political context, 2) the social inequality roots of health and human rights issues, and 3) the main health and human rights challenges faced by Latin American governments. It uses country case studies from throughout Latin America. It is open to undergraduate students in the social sciences and in public health. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and (LAST 1010 or 1020).

SPHU 3810 Special Topics in Public Hlth (0-3)
Special Topics in Public Health. Course may be repeated up to unlimited credit hours. Corequisite(s): SPHU 3660.

Corequisite(s): SPHU 3660.

SPHU 3880 Writing Intensive: SPHU 3010 (1)
Writing Intensive.

SPHU 3881 Writing Intensive: SPHU 3110 (1)
Writing Intensive.

SPHU 3882 Writing Intensive: SPHU 3120 (1)
Writing Intensive.

SPHU 3883 Writing Intensive: SPHU 3500 (1)
Writing Intensive.

SPHU 3884 Writing Intensive: SPHU 4010 (1)
Writing Intensive.

SPHU 3890 Service Learning: SPHU 3110 (0-1)
Service Learning. Course may be repeated up to unlimited credit hours.
SPHU 3891  Service Learning: SPHU 3300 (0-1)
Service Learning. Course may be repeated up to unlimited credit hours.

SPHU 4010  Formulation Public Hlth Policy (3)
Students will be introduced to the nature of health policy and the process by which it is developed. Various approaches to health policy are defined and their rationale considered. The politics of the development of health policy in democratic societies are discussed from both national and international perspectives. The ethics of public health policy are addressed. The course includes modern case studies of important public health issues (e.g., AIDS, smoking prevention, emerging infections such as West Nile Virus) to illustrate the development and application of policy to promote the public health. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4160  Intro to Statistical Packages (3)
This course covers the elementary concepts and applications for managing and analyzing data using the Statistical Analysis System (SAS) and Stata statistical packages. The course focuses on managing and summarizing hospital admissions and international health data. The concepts covered are applicable to virtually all academic and professional settings. Each lecture begins with a presentation to introduce fundamental mapping concepts and is complemented with hands-on exercises to reinforce technical application. The first part of the course covers SAS applications, and the analog concepts for Stata are covered in the second part of the course. Prerequisite(s): SPHU 3160.

Prerequisite(s): SPHU 3160.

SPHU 4180  Intro to Qualitative Methods (3)
This course is an introduction to the discipline of qualitative research in public health. Students will learn how to conceptualize a research project, develop a background description of the topic, propose a research guide, and compose a problem or purpose statement. Students will learn about the ethical and legal controls about public health research. In small groups, students will undertake a pilot research study as part of the course requirements and as a means of applying their research conceptualizing and data collection skills. Prerequisite(s): SPHU 1010, 1020 and 3110.

Prerequisite(s): SPHU 1010, 1020 and 3110.

SPHU 4200  Evidence Based Pub Hlth (3)
This course introduces the student to the scientific, epidemiological, organizational and management skills needed in designing and obtaining funding for an evidence-based public health intervention within an organizational or community setting. Students become familiar with the role and operation of not-for-profit organizations, foundations, national and international government agencies, and the local community in this process. Students learn to access publicly available and electronic information provided by these agencies and organizations. The course illustrates how evidence-based public health is used by funding agencies in developing and awarding grants and by public health providers and community contractors in applying for and receiving them. Emphasis is placed on how evidence-based public health is used in writing grant proposals and students have an opportunity to write a grant proposal as part of the course. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4210  Health & Environmental Risk (3,4)
The course covers the principles of human health and ecological risk assessment. The National Academy of Sciences model framework for risk assessment (hazard identification, dose response assessment, exposure analysis, and risk characterization) is used to explain environmental risks of long-term exposure of humans and wildlife to air pollution and chemicals in food and drinking water. The interaction of scientific methods with focus on toxicology and regulatory requirements will be reviewed. Case studies focus on current environmental pollution issues such as exposure to lead paint, mercury in fish, arsenic from smelters and petrochemical industrial emissions. Specific topics to be covered detail include: health and ecological effects toxicology and environmental epidemiology; qualitative and quantitative risk assessment methods; cancer risk models; regulatory toxicology; risk communication; reproductive risk assessment; endocrine disruption; different approaches to risk assessment by federal, state and international agencies; political and economic aspects of risk management; information resources, and field trips to state regulatory agencies. Prerequisite(s): SPHU 2150.

Prerequisite(s): SPHU 2150.

SPHU 4220  Latino Health in the US (3)
The goal of this course is to strengthen student's knowledge and understanding of Latinos in the United States and their health and disease at the community and population level. Students will explore successful policies and public health interventions targeting those populations. Latinos represent 18% of the current US population and while they have often been a marginalized group in the United States, their health status has not always conformed to expected patterns. This course will cover immigration patterns, acculturation, health care response to the Latino population, and health topics including reproductive health, child health, chronic diseases, sexual health, behavioral health, and occupational health. Prerequisite(s): SPHU 3110*.

Prerequisite(s): SPHU 3110*.
* May be taken concurrently.
Prerequisite(s): SPHU 3170.

SPHU 4260 Org Leadership & Mgmt (3)
Organizational Leadership and Management in Developing Countries is an interdisciplinary course that examines the complex challenges inherent in managing non-profit and government organizations in developing regions. Central to your examination is the role of leadership in managing social, political, and financial influences upon policy decision-making. This course is designed for students intending to work in leadership and management positions at government agencies, international organizations, or non-governmental organizations in the developing world. Within this context, the class focuses on negotiating constraints in policy development and implementation and draws comparatively from experiences in Africa, Asia, Latin America, and the United States. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4300 Public Health Comm. (3)
This course examines the intended and unintended effects of health communication, with specific focus on how the mass media and the Internet stimulate change in knowledge, attitudes, behavior, and subsequent health outcomes. Three health communication foci will be explored: 1) planned communication campaigns designed specifically to elicit health behavioral change, 2) traditional mass media’s role in influencing health outcomes, and 3) the evolving influence of the Internet on health outcomes. This course examines the linkages between communication effects and various health topics, including smoking/alcohol, sex, diet, and physical activity. By the end of the course, students will understand the theoretical and practical aspects of the linkage between communication and public health and be able to apply such to public health initiatives. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4330 Resilience in Int’l Disasters (3,4)
This course addresses the field of disaster and international humanitarian studies, trends and recent developments in the field, and strategies to reduce disaster risk. It builds basic concepts and tools that will prepare students to understand humanitarian issues for disaster management. Students will learn to articulate concepts about disasters and the changing patterns of disasters, disaster resilience and international humanitarian response. They will develop a broad view of the key organizations involved in and components of the international humanitarian response system. The course methodology includes case studies of major disasters including the Haiti earthquake of 2010, Hurricane Katrina, the current crisis in Syria, famines in the Horn of Africa, Sahel, Southern Africa and the 2004 Asian Tsunami. Students will gain hands-on experience in computing indicators used to determine the effects of disasters on public health. Guest lecturers from the Centers for Disease Control will participate through televideo-conferencing. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4340 Public Health Genomics (3)
This course is designed to prepare public health students for the study of human health in a post-genome era. Students will learn the molecular basics and the complex issues involved in applying and integrating genomic technology and information into public health. The students will be able to discuss the ethical, legal, and social implications of genomics on public health. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4350 Zoonotic Infections (3)
This course provides a foundation of knowledge on the public health consequences of infections originating in vertebrate animals that cross over to humans with or without disease. Topics include: the consequences of animal-transmitted infections on the emergence of new human diseases; adaptation process of animal infections transitioning from animal microbes to become human microbes; human activities, occupational exposures, and medical practices that enable microbial transitions. Students will present reports and follow zoonotic disease outbreaks in real time. Prerequisite(s): SPHU 1020 and 1020.

Prerequisite(s): SPHU 1020 and 1020.

SPHU 4400 Practical Bioinformatics (3)
This practical, hands-on course introduces the basic concepts and resources of bioinformatics and genomics. Topics include health information retrieval for literatures, public grants, nucleotide and protein sequences, genome variations, and human diseases. BLAST, DNA and protein sequence alignments, building phylogenetic trees, bioinformatics tools for the laboratory will be introduced. After taking the course, students will learn how to navigate different bioinformatics databases, and grasp strategies useful for research in public health and related fields in general.
SPHU 4410 Data & Information Mgt in PH (3)
This course provides students with a full introduction to data and information management. The topics include tools for collecting data; database concepts; data-entry techniques; queries of databases; data quality control; data cleaning, sharing, and reporting; database design; implementation and management of database systems. Hands-on exercises in medicine, biology, and public health are mainly practiced MS Access. Having taken this course, students will be able to design, implement and manage a database system for use in public health. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4540 Capstone Senior Seminar (3)
Capstone Senior Seminar.

SPHU 4550 Capstone Independent Study (3)
Capstone Senior Seminar.

SPHU 4560 Capstone Internship (3)
This credit is given to students who complete an approved public service internship, independent research with a public health faculty member, or complete an approved international study program. Course may be repeated up to unlimited credit hours.

SPHU 4570 Internship (3)
Public Health Internship. Course may be repeated up to unlimited credit hours.

SPHU 4580 Capstone International Program (3)
Capstone International Program.

SPHU 4810 Special Topics in Pub Health (1-3)
Special Topics in Public Health. Course may be repeated up to unlimited credit hours. Prerequisite(s): SPHU 1010 and 1020.

Prerequisite(s): SPHU 1010 and 1020.

SPHU 4880 Writing Intensive: SPHU 4010 (1)
Writing Intensive.

SPHU 4881 Writing Intensive: SPHU 4200 (1)
Writing Intensive.

SPHU 4882 Writing Intensive: SPHU 4260 (1)
Writing Intensive.

SPHU 4883 Writing Intensive: SPHU 4330 (1)
Writing Intensive.

SPHU 4884 Writing Intensive: SPHU 4240 (1)
Writing Intensive.

SPHU 4885 Writing Intensive: SPHU 4910 (1)
Writing Intensive. Corequisite(s): SPHU 4910.

Corequisite(s): SPHU 4910.

SPHU 4886 Writing Intensive: SPHU 5390 (1)
Writing Intensive.

SPHU 4887 Writing Intensive: SPHU 4390 (1)
Writing Intensive.

SPHU 4890 Service Learning: SPHU 4560 (0-1)
Service Learning. Course may be repeated up to unlimited credit hours.

SPHU 4892 Service Learning SPUH 4300 (0-1)
Service Learning. Course may be repeated up to unlimited credit hours.

SPHU 4910 Independent Study (1-3)
The student will work closely with a faculty member from the department of Environmental Health Sciences. The student and faculty member will craft a research topic together. Students should consult their advisor for assistance. Course may be repeated up to unlimited credit hours.
SPHU 4920  Independent Study (1-3)
The student will work closely with a faculty member from the department of Environmental Health Sciences. The student and faculty member will craft a research topic together. Students should consult their advisor for assistance.

SPHU 4990  Honors Thesis (3)
Honors Thesis.

SPHU 5000  Honors Thesis (4)
Honors Thesis.

SPHU 5380  Junior Year Abroad (1-20)
Junior Year Abroad. Course may be repeated up to unlimited credit hours.

SPHU 5390  Junior Year Abroad (1-20)
Junior Year Abroad. Course may be repeated up to unlimited credit hours.