

# UNDERGRADUATE PUBLIC HEALTH

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## Programs

### Undergraduate

#### Major

- Bachelor of Science in Public Health (<https://catalog.tulane.edu/public-health-tropical-medicine/undergraduate-public-health/public-health-bsph>)

#### Minor

- Public Health Minor (<https://catalog.tulane.edu/public-health-tropical-medicine/undergraduate-public-health/public-health-minor>)

## Courses

### Public Health Undergraduate (SPHU)

#### SPHU 1010 Intro To Public Health (3 Credit Hours)

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 Credit Hours)

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 Credit Hours)

Service Learning.

#### SPHU 1891 Service Learning: SPHU 1020 (1 Credit Hour)

Service Learning.

#### SPHU 2016 Evolu, Microbes & Disease Emer (3 Credit Hours)

This course covers the basic concepts of infectious disease, dynamics of disease transmission, and the emerging and reemerging infectious diseases from an evolutionary perspective. The course's main focus is on the dynamic nature of host-pathogen relationships and the biological phenomena behind the emergence of new microbial threats. From an initial review of some core evolutionary concepts, the students will progress into detailed discussions on how particular pathogens evolutionary strategies allow them to establish within human populations. 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\*.

\* May be taken concurrently.

#### SPHU 2050 Arthropods and Public Health (3 Credit Hours)

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.

**SPHU 2150 Foundations of Environ Health (3 Credit Hours)**

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.

**SPHU 2220 Concepts of Health & Wellness (3 Credit Hours)**

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.

**SPHU 2300 Introduction to Nutrition (3 Credit Hours)**

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 Credit Hours)**

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.

**SPHU 2810 Special Topics in Pub Health (1-3 Credit Hours)**

Special Topics in Public Health.

**Prerequisite(s):** SPHU 1010 and 1020.

**SPHU 2880 Writing Intensive: SPHU 2333 (1 Credit Hour)**

Writing Intensive.

**SPHU 3010 Foundations of Health Care Sys (3,4 Credit Hours)**

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.

**SPHU 3015 PH Program Implement & Mgmt (3 Credit Hours)**

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.

**SPHU 3020 Info In Public Hlth Prac (3 Credit Hours)**

This course provides an overview of how data, information and knowledge are acquired and applied to public health problems. The philosophy of scientific inquiry and systems approaches to problem solving are covered. The course describes the methods by which data are collected, analyzed and applied to public health planning, as well as the measures and statistical tools necessary to assess the importance of public health problems. Students learn to understand and evaluate scientific publications on public health topics.

**Prerequisite(s):** SPHU 1010 and 1020.

**SPHU 3030 GIS Information Systems (3 Credit Hours)****SPHU 3110 Social & Behavioral Perspectiv (3 Credit Hours)**

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.

**SPHU 3120 Issues & Strategies in PH (3 Credit Hours)**

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.

**SPHU 3150 Global-Local Enviro Hlth (3 Credit Hours)**

The course is designed to identify environmental issues regarding various environmental media. Fundamental concepts addressing these issues and potential solutions will be covered. Related experiences from global to local and personal perspectives will be

**Prerequisite(s):** SPHU 1010 and 1020.

**SPHU 3160 Biostatistics in Public Health (3 Credit Hours)**

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.

**SPHU 3170 Foundations of Epidemiology (3 Credit Hours)**

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.

**SPHU 3200 Nutrition & Chronic Disease (3 Credit Hours)**

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.

**SPHU 3250 Global Food Security & PH (3 Credit Hours)**

This course explores theoretical and practical questions regarding how food production and security have changed over the last 150 years. What are the regulatory and policy mechanisms that shape domestic food security as it relates to public health? How does food security affect human health and development? Are local/regional food production models a viable healthy alternative to the current national model? This course presents and analyzes the changing world of food security and production and its relation to public health. Using concepts and theories drawn from interdisciplinary sources, students will be able to understand current food security policy as well as analyze alternatives with potential for different health outcomes based upon sustenance patterns.

**Prerequisite(s):** SPHU 1010 and 1020.

**SPHU 3400 Nutrition, Cooking and Pub Hlt (3 Credit Hours)****SPHU 3410 Food Safety, Comm and Policy (3 Credit Hours)****SPHU 3500 PH Approach to Sexual Violence (3 Credit Hours)**

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 3600 Women's Repro & Obstetric Hlth (3 Credit Hours)**

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.

**SPHU 3660 Adverse Childhood Experiences (3 Credit Hours)**

**Corequisite(s):** SPHU 3810.

**SPHU 3810 Special Topics in Public Hlth (0-3 Credit Hours)**

Special Topics in Public Health.

**Corequisite(s):** SPHU 3660.

**SPHU 3880 Writing Intensive: SPHU 3010 (1 Credit Hour)**

Writing Intensive.

**SPHU 3881 Writing Intensive: SPHU 3110 (1 Credit Hour)**

Writing Intensive.

**SPHU 3882 Writing Intensive: SPHU 3120 (1 Credit Hour)**

Writing Intensive.

**SPHU 3883 Writing Intensive: SPHU 3500 (1 Credit Hour)**

Writing Intensive.

**SPHU 3884 Writing Intensive: SPHU 4010 (1 Credit Hour)**

Writing Intensive.

**SPHU 3890 Service Learning: SPHU 3110 (0-1 Credit Hours)**

Service Learning.

**SPHU 3891 Service Learning: SPHU 3300 (0-1 Credit Hours)**

Service Learning.

**SPHU 4010 Formulation Public Hlth Policy (3 Credit Hours)**

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.

**SPHU 4160 Intro to Statistical Packages (3 Credit Hours)**

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.

**SPHU 4180 Intro to Qualitative Methods (3 Credit Hours)**

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.

**SPHU 4200 Evidence Based Pub Hlth (3 Credit Hours)**

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.

**SPHU 4210 Health & Environmental Risk (3,4 Credit Hours)**

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.

**SPHU 4240 Epid of Sexually Transm Infect (3 Credit Hours)**

This course is designed to provide students with the skills to conduct epidemiologic research in HIV and other sexually acquired infections. The first part of the course, we discuss the etiology, treatment, epidemiology and common prevention methods for the most common and/or most serious STIs. In the second part of the course, we will cover the methodological issues of surveillance, study design in the context of clinical and behavioral research. Ethical aspects of conducting research in HIV/STI are also discussed. Students will have hands on practice examining methodological issues by completing four exercises. Finally, we put STIs into context by discussing social, economic and political ramifications of these infections in the world by reviewing two books and one movie that illustrate these concepts.

**Prerequisite(s):** SPHU 3170.

**SPHU 4260 Org Leadership & Mgmt (3 Credit Hours)**

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.

**SPHU 4300 Public Health Comm. (3 Credit Hours)**

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.

**SPHU 4330 Resilience in Int'l Disasters (3,4 Credit Hours)**

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.

**SPHU 4340 Public Health Genomics (3 Credit Hours)**

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.

**SPHU 4350 Zoonotic Infections (3 Credit Hours)**

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.

**SPHU 4400 Practical Bioinformatics (3 Credit Hours)**

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 & InformationMgt in PH (3 Credit Hours)**

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.

**SPHU 4540 Capstone Senior Seminar (3 Credit Hours)**

Capstone Senior Seminar.

**SPHU 4550 Capstone Independent Study (3 Credit Hours)**

Capstone Senior Seminar.

**SPHU 4560 Capstone Internship (3 Credit Hours)**

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.

**SPHU 4570 Internship (3 Credit Hours)**

Public Health Internship.

**SPHU 4580 Capstone International Program (3 Credit Hours)**  
Capstone International Program.

**SPHU 4810 Special Topics in Pub Health (1-3 Credit Hours)**  
Special Topics in Public Health.

**Prerequisite(s):** SPHU 1010 and 1020.

**SPHU 4880 Writing Intensive: SPHU 4010 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4881 Writing Intensive: SPHU 4200 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4882 Writing Intensive: SPHU 4260 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4883 Writing Intensive: SPHU 4330 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4884 Writing Intensive: SPHU 4240 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4885 Writing Intensive: SPHU 4910 (1 Credit Hour)**  
Writing Intensive.

**Corequisite(s):** SPHU 4910.

**SPHU 4886 Writing Intensive: SPHU 5390 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4887 Writing Intensive: SPHU 4390 (1 Credit Hour)**  
Writing Intensive.

**SPHU 4890 Service Learning: SPHU 4560 (0-1 Credit Hours)**  
Service Learning.

**SPHU 4892 Service Learning SPUH 4300 (0-1 Credit Hours)**  
Service Learning.

**SPHU 4910 Independent Study (1-3 Credit Hours)**

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 4920 Independent Study (1-3 Credit Hours)**

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 Credit Hours)**

Honors Thesis.

**SPHU 5000 Honors Thesis (4 Credit Hours)**

Honors Thesis.

**SPHU 5380 Junior Year Abroad (1-20 Credit Hours)**

Junior Year Abroad.

**SPHU 5390 Junior Year Abroad (1-20 Credit Hours)**

Junior Year Abroad.