

# MIEH - MARYLAND INSTITUTE FOR APPLIED ENVIRONMENTAL HEALTH

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## **MIEH300 A Public Health Perspective: Introduction to Environmental Health (3 Credits)**

Environmental health is that branch of public health that deals with the human health effects of exposure to chemical, physical, and biological agents in the community, workplace, and home. Activities within Environmental Health Sciences are associated with recognizing, assessing, understanding, and mitigating the impacts of chemical, physical, and biological agents as well as understanding how human behavior and action impacts the environment. This course focuses on the central concepts, principles, issues, and applications of the essential scientific components and strategies of control of major environmental health problems.

**Prerequisite:** Minimum grade of C- in CHEM131 and CHEM132; and must have completed or be concurrently enrolled in SPHL100 or PHSC300.

**Restriction:** Must have earned a minimum of 60 credits; and must be in Public Health Science program; or permission of SPHL-School of Public Health.

**Credit Only Granted for:** SPHL498N or MIEH300.

**Formerly:** SPHL498N.

## **MIEH309 Environmental Health Research (1-3 Credits)**

This research-based course will provide undergraduates with the opportunity to work closely with one of the faculty researchers in the Maryland Institute for Applied Environmental Health (MIAEH) within the School of Public Health. Our research covers multiple fields within the environmental health sciences (e.g. environmental epidemiology, exposure science, risk assessment, environmental microbiology, environmental microbial genomics, food toxicology, airborne infection transmission, environmental justice, and children's environmental health) that involve either laboratory-based research or non-laboratory based studies. Students will not only gain invaluable research and interpersonal skills but also contribute to MIAEH's ongoing environmental health research programs.

**Restriction:** Must have completed a minimum of 45 credits; and must have permission of instructor.

**Repeatable to:** 9 credits if content differs.

## **MIEH321 Environmental Determinants of Emerging Infectious Diseases (3 Credits)**

Examines the influences of environmental factors, economic development, migration, and land use changes on emergence and reemergence of infectious diseases. Explores how population growth, development, and climate change impact natural reservoirs of infectious diseases and how they are transmitted through human populations. Includes historical accounts, newly emerging and reemerging diseases.

**Prerequisite:** Must have completed or be concurrently enrolled in SPHL100.

## **MIEH325 Introduction to Clinical Research Methods (3 Credits)**

Introduces you to the importance of clinical research, including how studies are developed, structured, and implemented. You will also get hands-on experience with a variety of clinical sample collection methods. We will broadly review topics important to clinical research, including an overview of bioethics in research, the basics of clinical study structure and design, data collection, and the importance of good record keeping. You will apply this knowledge by developing your own clinical research project and creating a proposal in the structure of a grant funding application. You will also learn about topics related to clinical sample collection, including basic anatomy, the tools and procedures used, and the appropriate application of these procedures, as well as learning how to collect some basic clinical samples such as nasal swabs and blood samples.

## **MIEH330 Environmental Justice, Racism, and Environmental Health Disparities: How where you live can kill you (3 Credits)**

Examination of environmental justice history, theory and science; discussion of linkages between the physical, natural, and social environments and environmental injustice; analysis of how environmental injustice can lead to adverse health conditions and environmental health disparities; discuss environmental justice case studies; and understanding of tools that can be used to understand and address environmental justice issues.

**Prerequisite:** Minimum grade of C- in MIEH300.

**Restriction:** Must be in a major in SPHL-School of Public Health.

**Credit Only Granted for:** MIEH210 or MIEH330.

**Formerly:** MIEH210.

## **MIEH331 The Built Environment, Sustainability, and Public Health: The Good, the Bad, and the Ugly (3 Credits)**

Provides students with a fundamental understanding of theory, concepts, and issues related to the built environment; how the built environment influences behaviors and health outcomes; and opportunities to improve the built environment through planning, zoning, and community development initiatives that can make communities healthier, just, and more sustainable.

**Prerequisite:** Minimum grade of C- in MIEH300; or permission of instructor.

**Credit Only Granted for:** MIEH215 or MIEH331.

**Formerly:** MIEH215.

## **MIEH333 Every Drop Counts: Water, Food and Global Public Health (3 Credits)**

In-depth interdisciplinary study of the public health issues related to water use for global food production. Topics will include accessibility and availability of safe water for agriculture worldwide, potential microbiological and chemical hazards in agricultural water, alternative water sources such as reclaimed wastewater and return flows, food safety approaches to managing agricultural water, and agricultural influences on surface and groundwater quality. Political, social, and economic factors relating to agricultural water will be addressed, with special focus on regions that are leaders in innovative water management and regions where access to clean water for agriculture is a major challenge.

**Prerequisite:** ENSP101 or MIEH300; or permission of department.

**Cross-listed with:** ENSP360.

**Credit Only Granted for:** MIEH333 or ENSP360.

**MIEH407 One Health: Food Safety and Security (3 Credits)**

This is a collaborative course with the University of Maryland and Cairo University, Cairo, Egypt to explore the One Health Foundation and its application to improving international food safety and security. The purpose of this global undergraduate class is to disseminate knowledge on One Health and its application to improving global food safety and security. Students will apply principles of One Health to ensure food safety and food security in Egypt.

**Jointly offered with:** MIEH607.

**Restriction:** Must have earned at least 75 credits .

**Credit Only Granted for:** MIEH607 or MIEH407.

**MIEH480 Introduction to Occupational Health (3 Credits)**

Through in-person site visits, hands-on activities and case studies, students will learn about healthy workplaces and their critical role in public health. The course will center on the field of occupational health and safety. Site visits will enable students to hear firsthand from workers, local health & safety professionals, and former students now in the field. Case studies will allow students to explore today's critical work hazards across various work environments and industries. Students will develop and apply essential skills, such as conducting a safety walk-through in a worksite, leading a worker safety training, and writing a safety plan for an employer. Upon course completion, students will be prepared to address traditional workplace problems, as well as emerging hazards like extreme heat, poor indoor air quality, and the mental health challenges of today's workplace.

**Prerequisite:** Minimum grade of C- in MIEH300 and EPIB301.

**Recommended:** BSCI201.