

Community and Environmental Health

Web Site: <http://www.odu.edu/academics/programs/undergraduate/environmental-health> (<http://www.odu.edu/academics/programs/undergraduate/environmental-health/>)

James Blando, Interim Chair

The School of Community and Environmental Health offers undergraduate, graduate, and certificate programs that lead to careers in public health, environmental health and sustainability, health services research, community health, emergency preparedness, health care administration, industrial hygiene, and occupational safety and health. Additionally, the Bachelor of Science in Health Sciences (BSHS), the Bachelor of Science in Public Health (BSPH), and the Master of Public Health (MPH) offer practicing professionals the opportunity to complete their degrees in a distance format.

Shenandoah University – Bernard J. Dunn School of Pharmacy – Dual Degree (BSPH – PharmD)

ODU and Shenandoah University's (SU) Bernard J. Dunn (BJD) School of Pharmacy have entered into a Memorandum of Understanding (MOU). ODU and SU have the shared purpose of creating a formal collaboration between BJD and ODU's College of Health Sciences to promote a seamless transition to the Doctor of Pharmacy (Pharm. D.) from ODU's Bachelor of Science in Public Health degree through the implementation of a dual degree curriculum model.

BJD will give priority status to a maximum of five ODU students per yearly admissions cycle (this limit may be waived by BJD's Assistant/Associate Dean for Student Affairs ("ADSA") on a yearly basis after consultation with ODU's representatives) who have completed no less than 63 semester credit hours at ODU provided that the students meet the following criteria.

1. A PCAT composite score in the 50th percentile or greater with no individual score less than the 30th percentile in combination with a cumulative GPA at ODU of 3.0 on a 4.0 grading scale;
2. Completion of all of the then current prerequisite courses and credits required by BJD with a grade of "C" or better;
3. A cumulative prerequisite GPA of no less than 3.0 on a 4.0 scale;
4. Interview with and a designation of recommend/strongly recommend from the Dean of BJD or designee;
5. Two favorable letters of recommendation from faculty members at ODU; and
6. One letter of recommendation from a healthcare provider.

For more information, students should contact their advisor.

Programs

Bachelor of Science Program

- Environmental Health (BS) (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/environmental-health-bs/>)

Bachelor of Science in Public Health Program

- Public Health (BSPH) (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/public-health-bsph/>)

Minor Programs

- Environmental Health Minor (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/environmental-health-minor/>)

- Environmental Issues and Management Minor (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/environmental-issues-management-minor/>)
- Occupational Safety Minor (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/occupational-safety-minor/>)
- Public Health Minor (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/public-health-minor/>)

Certificate Program

- Occupational Safety Certificate (<http://catalog.odu.edu/undergraduate/health-sciences/community-environmental-health/occupational-safety-certificate/>)

Linked Bachelor of Science in Public Health (BSPH) to Master of Public Health (MPH) Program

The linked Bachelor of Science in Public Health (BSPH) to Master of Public Health (MPH) program provides qualified ODU undergraduate students with the opportunity to earn a Master of Public Health degree while taking up to 12 credits of the MPH program as an undergraduate student. Students in the linked program must earn a minimum of 151 credit hours (120 discrete credit hours for the undergraduate degree and 31 discrete credit hours for the graduate degree).

The program is designed for highly motivated students with the desire to continue their education after the baccalaureate (BSPH) degree. It is especially relevant to individuals seeking to work (or currently working) in the public health or non-profit sectors. Successful applicants must have demonstrated both a mature attitude and superior academic achievement. They must be recommended to the program by their major advisor or program director.

Linked BSPH to MPH program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the linked program work in close consultation with the BSPH Director and the MPH Program Office to develop an individualized plan of study based on the required coursework.

Well-qualified undergraduate students (overall program GPA of 3.5 and above) may take MPH-level courses as early as four semesters prior to their graduation and count up to 12* graduate credit hours toward their undergraduate degree. After receiving the undergraduate degree, a student will continue with the MPH program, taking MPH courses until completing the required 43 credit hours.

**For additional information, please contact the Program Directors at bsph@odu.edu or mph@odu.edu.*

Admission Information

Applicants for the linked BSPH to MPH program must meet the following requirements:

- Current Old Dominion University BSPH program student.
- Complete general education requirements by the end of Junior year.
- Apply to the linked program after completion of a minimum of 60 credits and before completion of 105 credits.
- A minimum cumulative grade point average (GPA) of 3.5 or higher at the time of application.
- Complete an interview with the BSPH Program Director and the MPH Program Director.
- Apply to the MPH program via Graduate Admissions no later than the June 15 application deadline, including a personal statement, two letters of recommendation including one letter of recommendation from the Undergraduate Program Director, and other application requirements set by the MPH program (<https://www.odu.edu/academics/programs/masters/public-health/>).

- Student progress will be reviewed at the end of Junior and Senior years by the undergraduate and graduate program directors.
- Once admitted to the linked program, students must maintain a 3.0 GPA or above throughout the program. Undergraduate students who fail to maintain a 3.0 GPA may revert to the regular BSPH program and count up to 12 hours of completed graduate coursework toward the undergraduate degree.

Courses

Environmental Health (ENVH)

ENVH 301 Principles of Environmental Health Science (3 Credit Hours)

An introduction to the chemical, physical and biological factors affecting human health and well-being. The emphasis is on application of controls to prevent disease and maximize environmental quality.

Prerequisites: A grade of C or better in ENGL 110C

ENVH 395 Topics in Environmental Health (1-3 Credit Hours)

Advanced study of selected topics.

Prerequisites: permission of the instructor

ENVH 401/501 Occupational Health (3 Credit Hours)

An introduction to the industrial environment relative to health problems and the etiologically related agents.

Prerequisites: junior standing

ENVH 402W/502 Environmental and Occupational Health Administration and Law (3 Credit Hours)

A review of the concepts and practice of administering environmental and occupational health control programs within agencies at the federal, state and local levels. The principles of administration and leadership of programs in the private sector are also discussed. The constitutional, statutory and administrative law bases for organizing and conducting such programs and developing environmental and occupational policies as well as the legal implications of enforcement will be addressed. A review of all major statutes and their agencies that enforce them will be addressed. This is a writing intensive course.

Prerequisites: junior standing and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C

ENVH 403 Environmental and Occupational Health Internship I (3 Credit Hours)

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor.

Prerequisites: ENVH 301, a minimum of 12 semester hours of ENVH courses, and permission of program director

ENVH 404 Environmental Health Internship II (3 Credit Hours)

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor.

Prerequisites: ENVH 301, a minimum of 12 semester hours of ENVH courses, and permission of program director

ENVH 405 Environmental Health Internship III (6 Credit Hours)

Includes placement in a health-related facility or industrial setting, prearranged with faculty instructor.

Prerequisites: ENVH 301, a minimum of 12 semester hours of ENVH courses, and permission of program director

ENVH 406/506 Principles of Occupational Safety and Health (3 Credit Hours)

A broad overview of the field of safety. A study of the factors influencing the occurrence of accidents and incidents is set in the context of safety legislation, current issues in the practice of safety and the ethical and professional responsibilities of the safety practitioner. The course also includes discussions of product safety, fire prevention and protection systems safety and human elements in loss prevention.

Prerequisites: junior standing

ENVH 407/507 Occupational Safety Standards, Laws and Regulations (3 Credit Hours)

A review of the important Occupational Safety and Health Standards and Codes with particular emphasis on application of these codes to typical work situations. Governmental enforcement methodologies are also discussed.

Prerequisites: junior standing

ENVH 420/520 Communicable Diseases (3 Credit Hours)

An in-depth study of the communicable disease processes as they pertain to environmental sources. A detailed discussion of specific communicable diseases that are manifested by various environmental etiologic agents.

Various environmental control measures to prevent the incidence of communicable diseases are presented.

Prerequisites: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 150, or permission of the instructor

ENVH 421/521 Food Safety (3 Credit Hours)

A comprehensive study of food and milk production, processing and preservation and controls exercised for the prevention of foodborne illnesses and spoilage.

Prerequisites: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 150, or permission of instructor

ENVH 422/522 Water and Wastewater Technology (3 Credit Hours)

Introduction to water quality management and wastewater treatment technology. Topics include the effect of organic, inorganic and thermal pollutants in water quality streams, waterborne diseases, monitoring concepts, methods of water quality management, regulatory considerations, theory and application of wastewater treatment concepts, wastewater characterization, and treatment methods and disposal methods.

Prerequisites: BIOL 150 or permission of instructor

ENVH 423/523 Vector-Borne Diseases and Their Control (3 Credit Hours)

Vector-borne diseases affect the health and well-being of humans and other animals in a wide variety of ways. Arthropod vectors (e.g., mosquitoes, filth flies, ticks and related groups) transmit numerous debilitating infectious diseases that oftentimes impose significant burden on healthcare systems.

This course provides insight on the ways in which arthropods impact global health and economic growth through the diseases they transmit.

Prerequisites: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 150, or permission of instructor

ENVH 424/524 Residential and Institutional Environments (3 Credit Hours)

A study of the physical aspects of housing and institutions as they relate to human health and well-being. Coverage is also given to infection control in health-care facilities.

Prerequisites: junior standing

ENVH 425/525 Occupational Safety and Health Program Management (3 Credit Hours)

The establishment, implementation and maintenance of occupational safety and health programs. Paradigms of safety, techniques for safety training and creation of value for safety among business managers and employees are emphasized.

Prerequisites: ENVH 406 or permission of instructor

ENVH 426/526 Physical Hazards and Their Control (3 Credit Hours)

An in-depth examination of the varied types of physical hazards in the work environment and the methods of prevention, recognition and control.

Prerequisites: junior standing

ENVH 438/538 Environmental Emergencies and Disasters (3 Credit Hours)

This course uses a multi-disciplinary approach and draws on theory, case studies, research, and field experience to examine the global problem of environmental emergencies and disasters. Particular attention is devoted to the public health challenges posed by chemical and radiological contamination situations. Students discuss contemporary issues and controversies, and spend time working in teams to craft solutions to key emergency preparedness problems.

Prerequisites: Junior standing

ENVH 440/540 Principles of Ergonomics (3 Credit Hours)

An introduction to the terminology, concepts and applications of physiology, anthropometry, biomechanics and engineering to workplace and work methods design. Emphasis will be given to workplace design and work methods for job safety and health.

Prerequisites: junior standing

ENVH 441/541 Industrial Hygiene (3 Credit Hours)

An in-depth study of the chemical and physical agents responsible for occupational illness and the methods used for their measurement, evaluation and control.

Prerequisites: CHEM 121N, CHEM 123N, CHEM 211, BIOL 240 or BIOL 250, or permission of instructor

ENVH 442/542 Industrial Hygiene Sampling Methods (3 Credit Hours)

An introduction to the detection and sampling alternatives used for estimating worker exposure to hazardous chemical, physical and biological agents in the occupational environment. Field and class activities are intended to simulate select occupational exposure situations and provide a basis for selection of the best evaluation techniques. Emphasis is on quantitative and qualitative methods typically used when estimating employee exposure to hazardous agents and the subjective decision making process.

Pre- or corequisite: ENVH 441 or permission of instructor

ENVH 443 Principles of Toxicology (3 Credit Hours)

An introduction to the fundamentals of toxicology with emphasis on the interaction of environmental and industrial chemicals with humans are studied. Exposure, dose response, kinetics and distribution of toxicants, metabolism of toxic agents, factors that affect toxicity and introductory chemical carcinogenesis are discussed.

Prerequisites: BIOL 110N or BIOL 121N, BIOL 117N or BIOL 123N, BIOL 240 or BIOL 250, CHEM 121N, CHEM 123N, or permission of the instructor

ENVH 445/545 Air Pollution and Its Control (3 Credit Hours)

The study of air pollution in relation to air quality criteria, pollutant production, atmospheric evolution, measurement and control techniques.

Prerequisites: PHYS 101N or PHYS 111N, CHEM 121N, CHEM 123N, MATH 162M, or permission of instructor

ENVH 446/546 Physical Hazards Laboratory (2 Credit Hours)

Use and application of sampling methods and equipment for measurement of physical hazards in the work environment. Includes aspects such as ergonomics, noise, vibration and radiation.

Pre- or corequisite: ENVH 426 or permission of instructor

ENVH 448/548 Epidemiology and Biostatistics (3 Credit Hours)

An introductory course in the principles and practices of epidemiology and the application of statistical and mathematical design and analysis of health research studies for the understanding and control of population health and disease with emphasis on environmental applications.

Prerequisites: STAT 130M, MATH 162M or permission of instructor

ENVH 461/561 Hazardous Waste Management (3 Credit Hours)

Description of the hazardous waste problem, the fundamentals of the chemistry involved with hazardous waste transport, methods of identification, assessment, control, and disposal of toxic and hazardous waste are discussed. In addition the relevant legal statutes, risk assessment emergency response and case studies are presented. Introduction to the toxicological effects of exposure to hazardous waste is discussed.

Prerequisites: junior standing

ENVH 465/565 Hazardous Materials Management (3 Credit Hours)

The management of hazardous materials includes a wide array of interlocking regulations addressing use, manufacturing, exposure, storage, shipping and disposal. A life cycle review of hazardous materials highlighting best practices and legislation is presented. Useful in preparation for CHMM examination.

Prerequisites: junior standing

ENVH 466 Environmental and Occupational Risk Assessment and Decision Analysis (3 Credit Hours)

The principles of quantitative health risk assessment of toxicants are presented. Qualitative and quantitative skills necessary to evaluate the probability of injury, disease, or death in the general population from exposure to environmental and occupational contaminants are discussed. Hazardous identification, exposure assessment, dose-response evaluation and risk characterization are emphasized. Risk management group projects assessing some real environmental risks are an important segment of the class.

Prerequisites: junior standing

ENVH 470/570 Industrial Environmental Management (3 Credit Hours)

Course addresses day-to-day technical and management aspects of environmental compliance, as well as regulatory issues faced in industrial applications. Includes audits and inspections, air and water pollution and hazardous waste.

Prerequisites: junior standing

ENVH 495/595 Topics in Environmental Health (1-3 Credit Hours)

Advanced study of selected topics.

Prerequisites: junior standing

ENVH 498/598 Independent Study in Environmental Health (1-3 Credit Hours)

An opportunity is afforded students to undertake independent study under the direction of a faculty member.

Prerequisites: permission of the Program Director

ENVH 499 Environmental and Occupational Health Senior Seminar (1 Credit Hour)

Advanced seminar.

Prerequisites: second semester senior standing and permission of the program director

Public Health (PUBH)**PUBH 200 Principles of Public Health (3 Credit Hours)**

Overview of the principles, practices, and science of public health in the world. This course focuses on origins, evolution, structure and administration of public health science. Exploration and discussion of the core functions of public health - biostatistics, environmental sciences, epidemiology, health policy and management sciences, and social and behavioral sciences - will be instructed.

PUBH 301 Principles of Environmental Health (3 Credit Hours)

An introduction to the chemical, physical and biological factors affecting human health and well-being. The emphasis is on application of controls to prevent disease and maximize environmental quality. Cross-listed with ENVH 301.

Prerequisites: A grade of C or better in ENGL 110C

PUBH 318 Principles of Nutrition (3 Credit Hours)

Course designed especially for those entering the health education or health care field, covering the physiology of each of the major body systems as a basis for understanding those aspects of its function that reflect the importance of various nutrients.

Prerequisites: CHEM 105N-CHEM 106N or CHEM 121N-CHEM 122N and CHEM 123N-CHEM 124N; BIOL 240, BIOL 241, BIOL 250 or BIOL 251, or permission of the instructor

PUBH 320 Health Equity and Disability Culture (3 Credit Hours)

This course will explore the history of health equity and disability and how prejudice and discrimination against people with disabilities impact health. Students will learn how to apply health equity frameworks, theories, and research to address disability-specific models of health disparities and to achieve health equity in populations with disabilities.

Prerequisites: PUBH 200 with a grade of C or higher

PUBH 335 Population Health (3 Credit Hours)

This course provides a population-based approach to professional work in disease management, chronic care management and politics, in addition to students studying public health, health policy, quality and patient safety, health care administration, medicine, nursing, pharmacy, social work and other related clinical professions.

Prerequisites: PUBH 200 with a grade of C or higher

PUBH 360 Introduction to Global Health (3 Credit Hours)

This course introduces students to health-care delivery systems of non-Western countries, specifically developing countries. The various factors that influence health-care planning and delivery of health services are addressed.

Prerequisites: PUBH 200

PUBH 390 The U.S. Healthcare Delivery System (3 Credit Hours)

The uniqueness of the U.S. healthcare delivery system will be explored in terms of a systems framework and its complexity. The basic characteristics that differentiate the U.S. healthcare delivery system from that of other countries will be presented. An understanding of the U.S. health care system has specific implications for health services managers.

Prerequisites: PUBH 200 with a grade of C or higher

PUBH 395 Topics in Public Health (3 Credit Hours)

Study of selected topics.

Prerequisites: A declared major in the University or approval of the program director

PUBH 403W Social and Behavioral Aspects of Public Health (3 Credit Hours)

The course will emphasize the importance of social context and cultural construction, social and behavioral foundations of public health and examine current issues in health from a social and behavioral sciences perspective. The course uses a social ecological framework to address multilevel influences on health and enlarge the dominant 'risk factor' approach to health behavior. This is a writing intensive course.

Prerequisites: ENGL 110C and ENGL 211C with a C or better, PUBH 335 or HLSC 335, and PUBH 390 or HLSC 390

PUBH 415 One Health-One Medicine (3 Credit Hours)

This course will teach students the applications of multidisciplinary competencies towards solving human health challenges. The course will identify all areas of global health issues that require human, veterinary and environmental applications for solutions.

Prerequisites: public health major or minor

PUBH 421 Leadership in Public Health (3 Credit Hours)

The course will introduce students to the main theories of leadership in public health covering key concepts and strategies using the six levels of leadership framework. The course will explore how individual, team, organizational, community, professional and global leadership impact population and public health.

Prerequisites: PUBH 335 or HLSC 335, PUBH 390 or HLSC 390, and a declared major in the BSPH program

PUBH 422 Health, Culture and Diversity-Reducing Disparities in Public Health (3 Credit Hours)

The course will introduce students to the main theories of culture, health and diversity and examines what is meant by culture, the ways in which culture intersects with health issues, how public health efforts can benefit by understanding and working with cultural processes, and a brief selection of conceptual tools and research methods that are useful in identifying relationships between culture and health. The course will also include practical guidelines for incorporating cultural understanding in public health settings and examples of programs where that has occurred.

Prerequisites: public health major or minor

PUBH 425 Health Aspects of Aging (3 Credit Hours)

Identifies major issues and problems in meeting health care needs of the aged. Emphasis on role of social assets and supports in determining effects of life changes on the aging process.

Prerequisites: PUBH 328, PUBH 335, and PUBH 390

PUBH 445 Health Services Research Methods (3 Credit Hours)

This course focuses on health services research and its assessment abilities and application in health care and public health. Topics include the use of EXCEL, SAS, and SPSS to analyze data. An exploration of the issues and challenges of health services research for health related organizations and other organizations. Statistical procedures and practices will also be conducted.

Prerequisites: STAT 130M

PUBH 448 Epidemiology and Biostatistics (3 Credit Hours)

An introductory course in the principles and practices of epidemiology and the application of statistical and mathematical design and analysis of health research studies for the understanding and control of population health and disease with emphasis on environmental applications. Cross-listed with ENVH 448.

Prerequisites: STAT 130M, MATH 162M, and a declared major in the BSPH program

PUBH 450 Public and Community Health Administration (3 Credit Hours)

A review of the principles and practice of administering public and community health organizations and programs at federal, state, and local levels. Constitutional, statutory and administrative bases for organizing and conducting public/community health programs will be discussed.

Prerequisites: A major in the BS in Public Health program or BSHP Health Services Administration program

PUBH 468 Internship (1-3 Credit Hours)

The internship will allow a student new to the health administration field or public health field to complete a capstone internship to gain entry skills for a beginning career pathway in the profession. The course is intended to provide field experience and assimilation of the theoretical aspects learned in the coursework in a practical/work setting. A minimum of 200 hours is required for the 3-credit internship.

Prerequisites: Major in BS in Public Health or BSHP in Health Services Administration and senior standing

PUBH 475 Healthcare Marketing (3 Credit Hours)

This course provides a basic understanding of marketing in a health care setting. It will cover the following: the history of marketing in a health care setting, health care markets, marketing techniques, and leadership skills in managing and supporting the marketing efforts. Cross-listed with CHP 475.

Prerequisites: a declared major in the University or approval of the program director

PUBH 485 Public Health Informatics (3 Credit Hours)

This course focuses on healthcare informatics (information systems) and applications in health care organizations. It provides an overview of health information system concepts, management, and integration of technology in healthcare organizations.

Prerequisites: Declared BSPH major

PUBH 495 Topics in Public Health (1-3 Credit Hours)

This course provides the opportunity for the study of selected topics in public/community health, including informatics, under the supervision of a faculty member.

Prerequisites: Permission of the instructor