Twin Cities Campus

Environmental Health Ph.D.

School of Public Health - Adm

School of Public Health

Link to a list of faculty for this program.

Contact Information:
School of Public Health, MMC 819, A395 Mayo Memorial Building, 420 Delaware Street, Minneapolis, MN 55455 (612-626-3500 OR 1-800-774-8636, Fax: 612-624-4498)
Email: sph-oasr@umn.edu
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- Program Type: Doctorate
- Requirements for this program are current for Fall 2017
- Length of program in credits: 48 to 74
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

Environmental health is the study of how exposures to external hazards, including chemical, physical, and biological agents, affect human health. Environmental health researchers and professionals seek to understand how to evaluate exposures that create risk to human health, how those exposures elicit biological responses that lead to disease and injury, and how policy is developed and used to prevent adverse health effects. This program offers academic programs at the master's and doctoral levels, conducts research in diverse areas of environmental health, offers continuing education, and conducts outreach. The academic programs prepare students to be leaders in environmental health in academia, industry, consulting groups, and government agencies. The program's training and research emphasizes the importance of translating basic scientific knowledge into solutions for current societal problems and concerns.

The Ph.D. brings students to a high level of academic competence through a combination of advanced coursework and research, and prepares students to assume leadership roles in the field.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A baccalaureate degree with coursework in the basic sciences. Each specialty requires slightly different preparation. Industrial Hygiene requires physics, biology, chemistry, organic, and calculus.

Other requirements to be completed before admission:
For more information visit www.sph.umn.edu

Applicants must submit their test score(s) from the following:

- GRE
  - General Test - Verbal Reasoning: 150
  - General Test - Quantitative Reasoning: 150
  - General Test - Analytical Writing: 4
- GMAT
- MCAT
  - Verbal Reasoning score: 10
  - Physical Science score: 10
  - Biological Reasoning score: 10
- LSAT

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 100
  - Paper Based - Total Score: 600

Information current as of March 29, 2024

- IELTS
  - Total Score: 7
- MELAB
  - Final score: 80

Key to test abbreviations(GRE, GMAT, MCAT, LSAT, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

24 to 50 credits are required in the major.
24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 4 semesters must be completed before filing a Degree Program Form.

Concentration Areas

Environmental Chemistry

Environmental Chemistry examines the interactions of pollutants with air, water, soil, and their exposures to humans and wildlife. The curriculum emphasizes the processes that control chemical behavior, transport, and fate as a function of environmental factors and chemical properties. This concentration requires a minimum of 54 total course credits.

Environmental Chemistry

Public Health Core Courses

PUBH 6320 - Fundamentals of Epidemiology (3.0 cr)
STAT 5021 - Statistical Analysis (4.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Division Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)

Concentration Program Courses

CEGE 5541 - Environmental Water Chemistry (3.0 cr)
CEGE 8542 - Chemistry of Organic Pollutants in Environmental Systems (3.0 cr)
EEB 5601 - Limnology (3.0 cr)
PUBH 6190 - Environmental Chemistry (3.0 cr)

Electives

Select electives in consultation with adviser to meet the 54 total credit minimum.
Take 1 or more course(s) from the following:

- CONS 8004 - Economic and Social Aspects of Conservation Biology (3.0 cr)
- CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
- CEGE 8503 - Environmental Mass Transport (4.0 cr)
- CEGE 8561 - Analysis and Modeling of Aquatic Environments I (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)
- PUBH 7196 - Applied Practice Experience: Environmental Health (1.0 - 5.0 cr)
- WRS 8050 - Special Topics in Water Resources Science (1.0 - 3.0 cr)
- EEB 5609 - Ecosystem Ecology (3.0 cr)

-OR-

Environmental and Occupational Epidemiology

Environmental and occupational epidemiology strives to understand the causal impact of environment and occupation on human health, because public health interventions are most likely to be effective when disease and injury etiology is understood. This concentration requires a minimum of 53 total course credits.

Public Health Core Courses

PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6450 - Biostatistics I (4.0 cr)

PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)

Division Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)

Concentration Program Courses

PUBH 6140 - Occupational and Environmental Epidemiology (2.0 cr)
PUBH 6342 - Epidemiologic Methods II (3.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
PUBH 8140 *{Inactive}*(2.0 cr)
PUBH 8141 - Doctoral Seminar in Observational Inference (2.0 cr)
PUBH 8142 *{Inactive}*(2.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Electives

Select electives in consultation with adviser to meet the required minimum of 54 course credits
Take 1 or more course(s) from the following:

•PUBH 6120 - Injury Prevention in the Workplace, Community, and Home (2.0 cr)
•PUBH 6121 *{Inactive}*(1.0 - 2.0 cr)
•PUBH 6122 *{Inactive}*(1.0 cr)
•PUBH 6130 - Occupational Medicine: Principles and Practice (2.0 cr)
•PUBH 6150 - Interdisciplinary Evaluation of Occupational Health and Safety Field Problems (3.0 cr)
•PUBH 6170 - Introduction to Occupational Health and Safety (3.0 cr)
•PUBH 6173 - Exposure to Physical Agents (2.0 cr)
•PUBH 6181 - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)
•PUBH 6343 - Epidemiologic Methods III (4.0 cr)
•PUBH 6355 - Pathophysiology of Human Disease (4.0 cr)
•PUBH 6381 - Genetics in Public Health in the Age of Precision Medicine (2.0 cr)
•PUBH 6385 - Epidemiology and Control of Infectious Diseases (2.0 cr)
•PUBH 6387 - Cancer Epidemiology (2.0 cr)
•PUBH 6806 - Principles of Public Health Research (2.0 cr)
•PUBH 7400 - Topics: Biostatistics (0.5 - 4.0 cr)
•PUBH 7430 - Statistical Methods for Correlated Data (3.0 cr)
•PUBH 7435 *{Inactive}*(3.0 cr)
•PUBH 7460 - Advanced Statistical Computing (3.0 cr)
•PUBH 8120 - Occupational and Environmental Health Sciences Research Seminar (1.0 cr)
•PUBH 6180 - Ecology of Infectious Diseases (3.0 cr)

-OR-

Environmental Health Policy

Environmental health policy provides broad, multidisciplinary training in environmental health issues, including occupational health, risk assessment, risk management, decision making, and policy analysis.This concentration requires a minimum of 61 total course credits.

General Requirements

PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)
PUBH 6320 - Fundamentals of Epidemiology (3.0 cr)
or PUBH 6341 - Epidemiologic Methods I (3.0 cr)

Division Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)

Program Course Requirements

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6115 - Worker Protection Law (1.0 cr)
PUBH 6116 - Environmental Law (1.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Electives

Select electives in consultation with adviser to meet the minimum of 61 total course credits.
Take 1 or more course(s) from the following:

•PUBH 6049 - Legislative Advocacy Skills for Public Health (3.0 cr)
•PUBH 6078 - Public Health Policy as a Prevention Strategy (2.0 cr)
•PUBH 6080 *{Inactive}*(2.0 cr)
•PUBH 6420 - Introduction to SAS Programming (1.0 cr)
•PUBH 6634 *{Inactive}*(2.0 cr)
•PUBH 6711 - Public Health Law (2.0 cr)
•PUBH 6724 - The Health Care System and Public Health (3.0 cr)
•PUBH 6726 *{Inactive}*(3.0 cr)

•PUBH 6780 - Topics in Public Health Administration and Policy (1.0 - 3.0 cr)
•PUBH 6835 *{Inactive}*(2.0 cr)
•PUBH 6852 - Program Evaluation in Health and Mental Health Settings (2.0 cr)
•PUBH 6862 - Cost-Effectiveness Analysis in Health Care (3.0 cr)
•PUBH 7196 - Applied Practice Experience: Environmental Health (1.0 - 5.0 cr)
•PUBH 8801 - Health Services Policy Analysis: Theory (1.0 cr)
•PUBH 8802 - Health Services Policy Analysis: Applications (2.0 cr)
•PUBH 8803 *{Inactive}*(2.0 cr)
•ANTH 5041 *{Inactive}*(3.0 cr)
•ANTH 8203 - Research Methods in Social and Cultural Anthropology (3.0 cr)
•PA 5001 *{Inactive}*(1.5 cr)
•PA 5002 - Introduction to Policy Analysis (1.5 cr)
•PA 5021 - Microeconomics for Policy Analysis (3.0 cr)
•PA 5022 - Applications of Economics for Policy Analysis (1.5 - 3.0 cr)
•PA 5031 - Statistics for Public Affairs (4.0 cr)
•PA 5032 - Applied Regression (2.0 cr)
•PA 5033 - Multivariate Techniques (2.0 cr)
•PA 5035 *{Inactive}*(1.5 cr)
•PA 5311 - Program Evaluation (3.0 cr)
•PA 5711 - Science, Technology & Environmental Policy (3.0 cr)
•PA 5722 - Economics of Environmental Policy (3.0 cr)
•PA 5441 *{Inactive}*(3.0 cr)

-OR-

Environmental Infectious Diseases

The study of Environmental Infectious Diseases is concerned with the emergence of foodborne and infectious diseases in the United States and around the world. The environment, and changing conditions in the environment can have a great impact on the distribution and occurrence of infectious diseases. In evaluating the chain of infection, environment may play a key role in reservoir maintenance, as well as a route of transmission through food, water, and air. Minimum 63 total course credits.

Public Health Core Courses

PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)

Division Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Concentration Program Courses

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6181 - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)
PUBH 6182 - Emerging Infectious Disease: Current Issues, Policies, and Controversies (3.0 cr)
PUBH 6342 - Epidemiologic Methods II (3.0 cr)
PUBH 6180 - Ecology of Infectious Diseases (3.0 cr)
PUBH 6385 - Epidemiology and Control of Infectious Diseases (2.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
PUBH 8140 *{Inactive}*(2.0 cr)
VMED 8090 - Epidemiology of Zoonoses and Diseases Common to Animals and Humans (3.0 cr)

Recommended Electives

Select electives in consultation with adviser to meet the minimum required 63 total course credits.
Take 1 or more course(s) from the following:
•PUBH 6381 - Genetics in Public Health in the Age of Precision Medicine (2.0 cr)
•PUBH 6355 - Pathophysiology of Human Disease (4.0 cr)
•PUBH 6711 - Public Health Law (2.0 cr)
•PUBH 7210 - Topics: Global Food Systems (0.5 cr)
•PUBH 7214 - Principles of Risk Communication (1.0 cr)
•VMED 5420 *{Inactive}*(3.0 cr)
•FSCN 4121 - Food Microbiology (3.0 cr)
•FSCN 4122 - Food Fermentations and Biotechnology (2.0 cr)
•MICA 8002 - Structure, Function, and Genetics of Bacteria and Viruses (4.0 cr)
•MICA 8003 - Immunity and Immunopathology (4.0 cr)
•MICA 8010 - Microbial Pathogenesis (3.0 cr)

-OR-

Occupational and Environmental Health Nursing

Occupational and Environmental Health Nursing provides intensive training for nurses interested in the development, management

and evaluation of health services, programs, and policies designed to promote health and prevent work-related injuries and disease.This concentration requires a minimum of 68 total course credits.

Public Health Core Courses

PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)

Division Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)
PUBH 7196 - Applied Practice Experience: Environmental Health (1.0 - 5.0 cr)

Concentration Program Courses

PUBH 6130 - Occupational Medicine: Principles and Practice (2.0 cr)
PUBH 6140 - Occupational and Environmental Epidemiology (2.0 cr)
PUBH 6150 - Interdisciplinary Evaluation of Occupational Health and Safety Field Problems (3.0 cr)
PUBH 6170 - Introduction to Occupational Health and Safety (3.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
PUBH 8120 - Occupational and Environmental Health Sciences Research Seminar (1.0 cr)
PUBH 8140 *{Inactive}*(2.0 cr)
NURS 8170 *{Inactive}*(3.0 cr)
NURS 8171 - Qualitative Research Design and Methods (3.0 - 4.0 cr)
NURS 8600 *{Inactive}*(2.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Recommended Electives

Select electives in consultation with adviser to meet the required minimum of 68 total course credits.
Take 1 or more course(s) from the following:

•PUBH 6120 - Injury Prevention in the Workplace, Community, and Home (2.0 cr)
•PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
•PUBH 6325 - Data Processing with PC-SAS (1.0 cr)
•PUBH 6342 - Epidemiologic Methods II (3.0 cr)
•PUBH 8813 - Measurement of Health-Related Social Factors (3.0 cr)
•PUBH 8142 *{Inactive}*(2.0 cr)

-OR-

Environmental Physiology

This is a trans-disciplinary program emphasizing new perspectives on the study of how humans, as complex heterogeneous biological systems, respond and adapt to their environment. Such study is required to understand the role of the environment in injury and disease, and to shape future technologies and policy for monitoring and protecting human health. Requires a minimum of 52 total course credits.

Public Health Core Courses

PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Concentration Program Courses

PUBH 8163 *{Inactive}*(5.0 cr)
PUBH 8165 *{Inactive}*(1.0 cr)
PUBH 8166 - Experiences in Toxicology Research (3.0 cr)
PHSL 5101 - Human Physiology (5.0 cr)
BIOL 4004 - Cell Biology (3.0 cr)
BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
or BIOC 8001 - Biochemistry: Structure, Catalysis, and Metabolism (3.0 cr)
BIOC 8002 - Molecular Biology and Regulation of Biological Processes (3.0 cr)

Recommended Electives

Select electives in consultation with adviser to fulfill the requirement of 52 total course credits.
Take 1 or more course(s) from the following:

•ANSC 8344 - Mechanisms of Hormone Action (2.0 cr)
•PHCL 5111 - Pharmacogenomics (3.0 cr)
•BIOC 8216 - Signal Transduction and Gene Expression (3.0 cr)
•PUBH 6320 - Fundamentals of Epidemiology (3.0 cr)
•PUBH 6414 - Biostatistical Literacy (3.0 cr)
•PUBH 6160 - Principles of Toxicology II (3.0 cr)
•PUBH 6161 - Regulatory Toxicology (2.0 cr)

-OR-

Occupational Injury Prevention Research Training

Occupational Injury Prevention Research Training (OIPRT), in concert with programs in Occupational Medicine, Occupational Health

Nursing, and Industrial Hygiene, among others, is part of the nationally funded Midwest Center for Occupational Health and Safety. This program provides a multifaceted approach to advanced academic and research training, with a primary goal to prevent and control occupational injuries. This concentration requires a minimum of 74 total course credits.

Epidemiology Course Requirements

PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6342 - Epidemiologic Methods II (3.0 cr)
PUBH 6343 - Epidemiologic Methods III (4.0 cr)

Biostatistics Course Requirements

PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)

Environmental Health Sciences Core Course Requirments

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)

OIPRTP Course Requirements

See main website for more information: http://sph.umn.edu/
PUBH 6120 - Injury Prevention in the Workplace, Community, and Home (2.0 cr)
PUBH 6121 *{Inactive}*(1.0 - 2.0 cr)
PUBH 6122 *{Inactive}*(1.0 cr)
PUBH 6140 - Occupational and Environmental Epidemiology (2.0 cr)
PUBH 6150 - Interdisciplinary Evaluation of Occupational Health and Safety Field Problems (3.0 cr)
PUBH 6170 - Introduction to Occupational Health and Safety (3.0 cr)
PUBH 6325 - Data Processing with PC-SAS (1.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)
PUBH 8100 *{Inactive}*(1.0 - 4.0 cr)
PUBH 8120 - Occupational and Environmental Health Sciences Research Seminar (1.0 cr)
PUBH 8140 *{Inactive}*(2.0 cr)
PUBH 8141 - Doctoral Seminar in Observational Inference (2.0 cr)
GRAD 8101 - Teaching in Higher Education (3.0 cr)
IE 5511 - Human Factors and Work Analysis (4.0 cr)
IE 5513 - Engineering Safety (4.0 cr)
PSY 5501 - Self, Society and Health - What's Work Got To Do With It? (3.0 cr)
Grant Writers'Seminars and Workshops, L.L.C: Write Winning Grants (2 days)
ERC Interdisciplinary Seminar Series (minimum attendance: 5 of 9 per year)

Thesis Credit Requirement

24 thesis credits required.
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Electives

Electives chosen in consultation with advisor to meet the minimum required 74 course credits.
Take 1 or more course(s) from the following:
•PUBH 6348 - Writing Research Grants (2.0 cr)
•PUBH 7405 - Biostatistical Inference I (4.0 cr)
•PUBH 7406 - Biostatistical Inference II (3.0 cr)
•PUBH 7407 - Analysis of Categorical Data (3.0 cr)
•PUBH 7430 - Statistical Methods for Correlated Data (3.0 cr)
•PUBH 7435 *{Inactive}*(3.0 cr)
•PUBH 7450 - Survival Analysis (3.0 cr)
•PUBH 8142 *{Inactive}*(2.0 cr)
•PUBH 8813 - Measurement of Health-Related Social Factors (3.0 cr)
•GRAD 8102 - Practicum for Future Faculty (3.0 cr)
•GRAD 8200 - Teaching and Learning Topics in Higher Education (1.0 cr)
•PUBH 6115 - Worker Protection Law (1.0 cr)
•PUBH 6116 - Environmental Law (1.0 cr)
•PUBH 6123 - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)
•PUBH 6130 - Occupational Medicine: Principles and Practice (2.0 cr)
•PUBH 6173 - Exposure to Physical Agents (2.0 cr)
•PUBH 6344 - Completing the Integrative Learning Experience: Secondary Data Analysis (2.0 cr)
•PUBH 6355 - Pathophysiology of Human Disease (4.0 cr)
•PUBH 6806 - Principles of Public Health Research (2.0 cr)
•PUBH 6852 - Program Evaluation in Health and Mental Health Settings (2.0 cr)
•PUBH 7401 - Fundamentals of Biostatistical Inference (4.0 cr)
•PUBH 7402 - Biostatistics Modeling and Methods (4.0 cr)
•PUBH 7420 - Clinical Trials: Design, Implementation, and Analysis (3.0 cr)
•KIN 5122 - Applied Exercise Physiology (3.0 cr)
•KIN 5723 - Psychology of Sport Injury and Rehabilitation (3.0 cr)

-OR-

Occupational Health Services Research and Policy

The OHSRP training program is an innovative collaboration between the Division of Environmental Health Sciences and the Division of Health Policy and Management. The program prepares researchers that will help meet the demand for more rigorous evaluation of workplace policies and programs designed to reduce the nation¿s burden of occupational illness and injury and to protect and promote the well-being of the American workforce. This concentration requires a minimum of 74 total credits.

Public Health Core Curriculum

PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6450 - Biostatistics I (4.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
PUBH 6170 - Introduction to Occupational Health and Safety (3.0 cr)
PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)
PUBH 8120 - Occupational and Environmental Health Sciences Research Seminar (1.0 cr)

Supporting Coursework in Health Policy and Management

PUBH 6862 - Cost-Effectiveness Analysis in Health Care (3.0 cr)
PUBH 6855 - Medical Sociology (3.0 cr)
PUBH 8801 - Health Services Policy Analysis: Theory (1.0 cr)
PUBH 6845 - Using Demographic Data for Policy Analysis (3.0 cr)

Potential Electives

Select electives in consultation with advisor to meet the required minimum of 74 total credits.
Take 1 or more course(s) from the following:
•PUBH 6803 - Conducting a Systematic Literature Review (3.0 cr)
•PUBH 6810 - Survey Research Methods (3.0 cr)
•PUBH 8813 - Measurement of Health-Related Social Factors (3.0 cr)
•PUBH 6325 - Data Processing with PC-SAS (1.0 cr)
•PUBH 6835 *{Inactive}*(2.0 cr)
•PUBH 6724 - The Health Care System and Public Health (3.0 cr)
•PUBH 6140 - Occupational and Environmental Epidemiology (2.0 cr)
•PUBH 8140 *{Inactive}*(2.0 cr)
•PUBH 8142 *{Inactive}*(2.0 cr)

Program Sub-plans

A sub-plan is not required for this program.
Students may not complete the program with more than one sub-plan.

Industrial Hygiene

Industrial hygiene is concerned with the health and safety of people at work, and the community at large. Specific concerns are with the recognition, evaluation and control of potential workplace hazards, including chemical, physical, and biological agents; and the potential health threats to the community and the environment.

Required Coursework

The Industrial Hygiene program is concerned with the health and safety of people at work, and the community at large. Specific concerns are with the recognition, evaluation and control of potential workplace hazards, including chemical, physical and biological agents; and the potential health threats to the community and the environment. Requires a minimum of 63 total credits.

Public Health Core Courses

PUBH 6020 - Fundamentals of Social and Behavioral Science (2.0 cr)
PUBH 6320 - Fundamentals of Epidemiology (3.0 cr)
PUBH 6741 - Ethics in Public Health: Professional Practice and Policy (1.0 cr)
PUBH 6742 - Ethics in Public Health: Research and Policy (1.0 cr)
PUBH 6751 - Principles of Management in Health Services Organizations (2.0 cr)
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)
Choose one of the following courses.
PUBH 6414 - Biostatistical Literacy (3.0 cr)
or PUBH 6450 - Biostatistics I (4.0 cr)

Environmental Health Core Courses

PUBH 6103 *{Inactive}*(2.0 cr)
PUBH 6104 *{Inactive}*(2.0 cr)
PUBH 6105 *{Inactive}*(2.0 cr)
PUBH 7194 - Integrative Learning Experience: Environmental Health (1.0 - 5.0 cr)
PUBH 7196 - Applied Practice Experience: Environmental Health (1.0 - 5.0 cr)

Occupational Health and Safety Core Requirements

PUBH 6130 - Occupational Medicine: Principles and Practice (2.0 cr)

PUBH 6150 - Interdisciplinary Evaluation of Occupational Health and Safety Field Problems (3.0 cr)
PUBH 6170 - Introduction to Occupational Health and Safety (3.0 cr)

Industrial Hygiene Program Requirements

PUBH 6172 - Industrial Hygiene Applications (2.0 cr)
PUBH 6173 - Exposure to Physical Agents (2.0 cr)
PUBH 6174 - Control of Workplace Exposure (3.0 cr)
PUBH 6175 - Environmental Measurements Laboratory (2.0 cr)
PUBH 6192 - Measurement and Properties of Air Contaminants (2.0 cr)
PUBH 6193 - Advanced Topics in Human Exposure Science (2.0 cr)

Industrial Hygiene Electives

Select electives in consultation with adviser.
Take 1 or more course(s) from the following:

- PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
- PUBH 6115 - Worker Protection Law (1.0 cr)
- PUBH 6116 - Environmental Law (1.0 cr)
- PUBH 6120 - Injury Prevention in the Workplace, Community, and Home (2.0 cr)
- PUBH 6131 - Working in Global Health (2.0 cr)
- PUBH 6132 - Air, Water, and Health (2.0 cr)
- PUBH 6140 - Occupational and Environmental Epidemiology (2.0 cr)
- PUBH 6161 - Regulatory Toxicology (2.0 cr)
- PUBH 6176 - Hazardous Materials and Waste Management (2.0 cr)
- PUBH 6182 - Emerging Infectious Disease: Current Issues, Policies, and Controversies (3.0 cr)
- PUBH 6190 - Environmental Chemistry (3.0 cr)
- PUBH 6415 *{Inactive}*(3.0 cr)
- PUBH 6451 - Biostatistics II (4.0 cr)
- PUBH 7220 *{Inactive}*(1.0 cr)
- PUBH 7260 - Ergonomics and the Prevention of Workplace Injuries (1.0 cr)
- CEGE 4561 - Solids and Hazardous Wastes (3.0 cr)
- CEGE 5551 - Environmental Microbiology (3.0 cr)
- IE 5511 - Human Factors and Work Analysis (4.0 cr)
- IE 5513 - Engineering Safety (4.0 cr)
- KIN 5001 - Foundations of Human Factors/Ergonomics (3.0 cr)
- ME 5113 - Aerosol/Particle Engineering (4.0 cr)
- ME 5133 - Aerosol Measurement Laboratory (4.0 cr)
- PA 5721 - Energy Systems and Policy (3.0 cr)

Course Group 1