



Twin Cities Campus

Environmental Health M.S.

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)

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- Program Type: Master's
- Requirements for this program are current for Spring 2021
- Length of program in credits: 30 to 52
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

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. Environmental Health at the University of Minnesota offers master's and doctoral degrees, conducts research in diverse areas of environmental health, offers continuing education, and conducts outreach. Students are prepared 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 MS program offers students a wide range of coursework and research opportunities in areas such as environmental infectious diseases; environmental and occupational epidemiology; environmental chemistry; exposure science; food safety; injury and violence epidemiology and prevention; global environmental health; and regulatory toxicology and risk assessment to prepare them for careers in their chosen area of environmental health. A generalist emphasis area and a specialized track in industrial hygiene are also available. The industrial hygiene track is accredited by ABET.

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.

Minimum requirements include a baccalaureate degree with coursework in the basic sciences.

Other requirements to be completed before admission:

Prerequisites for the regulatory toxicology and risk management emphasis include a bachelor's degree in the basic sciences, including completion of courses in organic chemistry, biochemistry, cell biology and physiology. Students who have not completed at least two prerequisites must do so upon admission to the MS program and in consultation with the advisor. Prerequisite coursework cannot be applied to MS credit requirements.

The Industrial Hygiene track requires additional preparation. For more information refer to <http://www.sph.umn.edu/programs/ehs/tracks/index.asp>.

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: 3.5
- GMAT



- MCAT
- LSAT
- DAT
 - Score: 18

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

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

Plan A: Plan A requires 24 to 28 major credits, 0 credits outside the major, and 10 thesis credits. The final exam is written and oral.

Plan B: Plan B requires 30 to 52 major credits and 0 credits outside the major. The final exam is written and oral. A capstone project is required.

Capstone Project: The Plan B project is a master's capstone project selected in consultation with the advisor.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

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.

Public Health Core Requirements (11 credits)

All Public Health Core coursework must be taken on the A-F grade basis, with a minimum grade of B- earned for each course.

Epidemiology (3 credits)

Select one of the following courses in consultation with the advisor. Students pursuing either the Environmental and Occupational Epidemiology emphasis or the Injury and Violence Epidemiology and Prevention emphasis must take PUBH 6341. Students pursuing the Industrial Hygiene track must take PUBH 6320.

[PUBH 6320](#) - Fundamentals of Epidemiology (3.0 cr)

or [PUBH 6341](#) - Epidemiologic Methods I (3.0 cr)

Environmental Health (2 credits)

Take the following course:

[PUBH 6102](#) - Issues in Environmental Health (2.0 cr)

Foundations of Public Health (2 credits)

Take the following course:

[PUBH 6250](#) - Foundations of Public Health (2.0 cr)

Biostatistics (3-4 credits)

Select one of the following courses in consultation with the advisor. Students pursuing either the Environmental and Occupational Epidemiology emphasis, the Injury and Violence Epidemiology and Prevention emphasis, or the Industrial Hygiene track must take PUBH 6450. Only students pursuing the Environmental Chemistry emphasis can take STAT 5021 and are encouraged to take STAT 5021.

[PUBH 6414](#) - Biostatistical Literacy (3.0 cr)

or [PUBH 6450](#) - Biostatistics I (4.0 cr)

or [STAT 5021](#) - Statistical Analysis (4.0 cr)

Ethics (1 credit)

Take the following course:

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

Plan Options

Plan A Thesis (10 credits)



Plan A students must take at least 10 master's thesis credits.

[PUBH 8777](#) - Thesis Credits: Master's (1.0 - 18.0 cr)

or **Plan B Project (3 credits)**

Plan B students must take at least 3 Plan B Project credits in consultation with the advisor.

[PUBH 7195](#) - MS in Environmental Health Sciences Plan B Project (1.0 - 5.0 cr)

Concentration Areas

Generalist (15-16 credits)

The Generalist emphasis is restricted to Plan B only.

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list. If Topics, must select PubH 6100 GIS & Spatial Analysis (3 cr).

[PUBH 6112](#) - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)

[PUBH 6141](#) - GIS & Spatial Analysis for Public Health (3.0 cr)

[PUBH 6154](#) - Climate Change and Global Health Modeling (3.0 cr)

[PUBH 6162](#) - Biomarkers (2.0 cr)

[PUBH 6181](#) - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)

[PUBH 6190](#) - Environmental Chemistry (3.0 cr)

[PUBH 6193](#) - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

[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 6123](#) - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

Elective Coursework

Select electives, in consultation with the advisor, from the following list to satisfy the 30-credit minimum. Other courses may be substituted with approval of the advisor and director of graduate studies.

PA 5451 ~~(Inactive)~~ (3.0 cr)

[PUBH 6232](#) - Emergency Preparedness: A Public Health Perspective (2.0 cr)

[PUBH 6011](#) - Public Health Approaches to HIV/AIDS (3.0 cr)

[PUBH 6034](#) - Evaluation I: Concepts (3.0 cr)

[PUBH 6035](#) - Evaluation II: Planning & Evaluation (3.0 cr)

[PUBH 6045](#) - Skills for Policy Development (1.0 cr)

[PUBH 6049](#) - Legislative Advocacy Skills for Public Health (3.0 cr)

[PUBH 6055](#) - Social Inequalities in Health (2.0 cr)

[PUBH 6060](#) - Motivational Interviewing: Strategies to Effect Behavior Change (1.0 cr)

[PUBH 6066](#) - Building Communities, Increasing Health: Preparing for Community Health Work (2.0 cr)

[PUBH 6078](#) - Public Health Policy as a Prevention Strategy (2.0 cr)

[PUBH 6085](#) ~~(Inactive)~~ (2.0 cr)

[PUBH 6094](#) - Interventions to Address Weight-Related Health and Eating Disorders (2.0 cr)

[PUBH 6134](#) - Sustainable Development and Global Public Health (2.0 cr)

[PUBH 6210](#) ~~(Inactive)~~ (1.0 cr)

[PUBH 6325](#) - Data Processing with PC-SAS (1.0 cr)

[PUBH 6341](#) - Epidemiologic Methods I (3.0 cr)

[PUBH 6342](#) - Epidemiologic Methods II (3.0 cr)

[PUBH 6348](#) - Writing Research Grants (2.0 cr)

[PUBH 6385](#) - Epidemiology and Control of Infectious Diseases (2.0 cr)

[PUBH 6386](#) - Cardiovascular Disease Epidemiology and Prevention (2.0 cr)

[PUBH 6387](#) - Cancer Epidemiology (2.0 cr)

[PUBH 6420](#) - Introduction to SAS Programming (1.0 cr)

[PUBH 6431](#) - Topics in Hierarchical Bayesian Analysis (1.0 cr)

[PUBH 6451](#) - Biostatistics II (4.0 cr)

[PUBH 6527](#) - Healthcare Leadership and Effecting Change (2.0 cr)

[PUBH 6556](#) - Health and Health Systems (3.0 cr)

[PUBH 6557](#) - Health Finance I (3.0 cr)

[PUBH 6558](#) - Health Finance II (3.0 cr)

[PUBH 6560](#) - Operations Research and Quality in Health Care (3.0 cr)

[PUBH 6562](#) - Information Technology in Health Care (2.0 cr)

[PUBH 6563](#) - Integrated Delivery Systems (2.0 cr)

[PUBH 6564](#) - Private Purchasers of Health Care: Roles of Employers and Health Plans in U.S. Health Care System (2.0 cr)

[PUBH 6565](#) - Innovation of Healthcare Services (2.0 cr)

[PUBH 6568](#) - Interprofessional Teamwork in Health Care (2.0 cr)



PUBH 6571 - Quality, Patient Safety, and Performance Improvement (2.0 cr)
PUBH 6577 - Advanced Problem Solving in Health Services Administration (2.0 cr)
PUBH 6589 - Medical Technology Evaluation and Market Research (2.0 cr)
PUBH 6601 - Born a Girl: Global Women's Health (1.0 cr)
PUBH 6605 - Sexual, Reproductive, and Perinatal Public Health (2.0 cr)
PUBH 6627 - Sexuality Education: Criteria, Curricula, and Controversy (1.0 cr)
PUBH 6630 - Foundations of Maternal and Child Health Leadership (3.0 cr)
PUBH 6730 - International Comparative Health Systems (2.0 cr)
PUBH 6732 - Topics and Methods in Global Health Assessment (2.0 cr)
PUBH 6852 - Program Evaluation in Health and Mental Health Settings (2.0 cr)
PUBH 6906 - Global Nutrition (2.0 cr)

-OR-

Environmental and Occupational Epidemiology (15 credits)

The Environmental and Occupational Epidemiology emphasis is restricted to Plan B only.

Required Coursework (9 credits)

Take the following 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)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6141 - GIS & Spatial Analysis for Public Health (3.0 cr)
PUBH 6154 - Climate Change and Global Health Modeling (3.0 cr)
PUBH 6162 - Biomarkers (2.0 cr)
PUBH 6181 - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)
PUBH 6190 - Environmental Chemistry (3.0 cr)
PUBH 6193 - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

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 6123 - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

Electives (2 credits)

Select coursework, in consultation with the advisor, from the following list to satisfy the 30-credit minimum. Other courses may be substituted with approval of the advisor and director of graduate studies.

PA 5451 ~~(Inactive)~~ (3.0 cr)
PUBH 6232 - Emergency Preparedness: A Public Health Perspective (2.0 cr)
PUBH 6011 - Public Health Approaches to HIV/AIDS (3.0 cr)
PUBH 6034 - Evaluation I: Concepts (3.0 cr)
PUBH 6035 - Evaluation II: Planning & Evaluation (3.0 cr)
PUBH 6045 - Skills for Policy Development (1.0 cr)
PUBH 6049 - Legislative Advocacy Skills for Public Health (3.0 cr)
PUBH 6055 - Social Inequalities in Health (2.0 cr)
PUBH 6060 - Motivational Interviewing: Strategies to Effect Behavior Change (1.0 cr)
PUBH 6066 - Building Communities, Increasing Health: Preparing for Community Health Work (2.0 cr)
PUBH 6078 - Public Health Policy as a Prevention Strategy (2.0 cr)
PUBH 6085 ~~(Inactive)~~ (2.0 cr)
PUBH 6094 - Interventions to Address Weight-Related Health and Eating Disorders (2.0 cr)
PUBH 6134 - Sustainable Development and Global Public Health (2.0 cr)
PUBH 6210 ~~(Inactive)~~ (1.0 cr)
PUBH 6325 - Data Processing with PC-SAS (1.0 cr)
PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6348 - Writing Research Grants (2.0 cr)
PUBH 6385 - Epidemiology and Control of Infectious Diseases (2.0 cr)
PUBH 6386 - Cardiovascular Disease Epidemiology and Prevention (2.0 cr)
PUBH 6387 - Cancer Epidemiology (2.0 cr)
PUBH 6420 - Introduction to SAS Programming (1.0 cr)
PUBH 6431 - Topics in Hierarchical Bayesian Analysis (1.0 cr)
PUBH 6527 - Healthcare Leadership and Effecting Change (2.0 cr)
PUBH 6556 - Health and Health Systems (3.0 cr)



PUBH 6557 - Health Finance I (3.0 cr)
PUBH 6558 - Health Finance II (3.0 cr)
PUBH 6560 - Operations Research and Quality in Health Care (3.0 cr)
PUBH 6562 - Information Technology in Health Care (2.0 cr)
PUBH 6563 - Integrated Delivery Systems (2.0 cr)
PUBH 6564 - Private Purchasers of Health Care: Roles of Employers and Health Plans in U.S. Health Care System (2.0 cr)
PUBH 6565 - Innovation of Healthcare Services (2.0 cr)
PUBH 6568 - Interprofessional Teamwork in Health Care (2.0 cr)
PUBH 6571 - Quality, Patient Safety, and Performance Improvement (2.0 cr)
PUBH 6577 - Advanced Problem Solving in Health Services Administration (2.0 cr)
PUBH 6589 - Medical Technology Evaluation and Market Research (2.0 cr)
PUBH 6601 - Born a Girl: Global Women's Health (1.0 cr)
PUBH 6605 - Sexual, Reproductive, and Perinatal Public Health (2.0 cr)
PUBH 6627 - Sexuality Education: Criteria, Curricula, and Controversy (1.0 cr)
PUBH 6630 - Foundations of Maternal and Child Health Leadership (3.0 cr)
PUBH 6730 - International Comparative Health Systems (2.0 cr)
PUBH 6732 - Topics and Methods in Global Health Assessment (2.0 cr)
PUBH 6852 - Program Evaluation in Health and Mental Health Settings (2.0 cr)
PUBH 6906 - Global Nutrition (2.0 cr)

-OR-

Environmental Infectious Diseases (15-16 credits)

The Environmental Infectious Diseases emphasis is restricted to Plan B only.

Required Coursework (10 credits)

Take the following courses:

PUBH 6182 - Emerging Infectious Disease: Current Issues, Policies, and Controversies (3.0 cr)
PUBH 6184 - Field and laboratory methods in public health entomology (2.0 cr)
PUBH 6385 - Epidemiology and Control of Infectious Diseases (2.0 cr)
VMED 5180 - Ecology of Infectious Disease (3.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6141 - GIS & Spatial Analysis for Public Health (3.0 cr)
PUBH 6154 - Climate Change and Global Health Modeling (3.0 cr)
PUBH 6162 - Biomarkers (2.0 cr)
PUBH 6181 - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)
PUBH 6190 - Environmental Chemistry (3.0 cr)
PUBH 6193 - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

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 6123 - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

Electives (1-2 credits)

Select coursework, in consultation with the advisor, from the following list to satisfy the 30-credit minimum. Other courses may be substituted with approval of the advisor and director of graduate studies.

PA 5451 *{Inactive}* (3.0 cr)
PUBH 6232 - Emergency Preparedness: A Public Health Perspective (2.0 cr)
PUBH 6011 - Public Health Approaches to HIV/AIDS (3.0 cr)
PUBH 6034 - Evaluation I: Concepts (3.0 cr)
PUBH 6035 - Evaluation II: Planning & Evaluation (3.0 cr)
PUBH 6045 - Skills for Policy Development (1.0 cr)
PUBH 6049 - Legislative Advocacy Skills for Public Health (3.0 cr)
PUBH 6055 - Social Inequalities in Health (2.0 cr)
PUBH 6060 - Motivational Interviewing: Strategies to Effect Behavior Change (1.0 cr)
PUBH 6066 - Building Communities, Increasing Health: Preparing for Community Health Work (2.0 cr)
PUBH 6078 - Public Health Policy as a Prevention Strategy (2.0 cr)
PUBH 6085 *{Inactive}* (2.0 cr)
PUBH 6094 - Interventions to Address Weight-Related Health and Eating Disorders (2.0 cr)
PUBH 6134 - Sustainable Development and Global Public Health (2.0 cr)
PUBH 6210 *{Inactive}* (1.0 cr)
PUBH 6325 - Data Processing with PC-SAS (1.0 cr)



PUBH 6341 - Epidemiologic Methods I (3.0 cr)
PUBH 6342 - Epidemiologic Methods II (3.0 cr)
PUBH 6348 - Writing Research Grants (2.0 cr)
PUBH 6386 - Cardiovascular Disease Epidemiology and Prevention (2.0 cr)
PUBH 6387 - Cancer Epidemiology (2.0 cr)
PUBH 6420 - Introduction to SAS Programming (1.0 cr)
PUBH 6431 - Topics in Hierarchical Bayesian Analysis (1.0 cr)
PUBH 6451 - Biostatistics II (4.0 cr)
PUBH 6527 - Healthcare Leadership and Effecting Change (2.0 cr)
PUBH 6556 - Health and Health Systems (3.0 cr)
PUBH 6557 - Health Finance I (3.0 cr)
PUBH 6558 - Health Finance II (3.0 cr)
PUBH 6560 - Operations Research and Quality in Health Care (3.0 cr)
PUBH 6562 - Information Technology in Health Care (2.0 cr)
PUBH 6563 - Integrated Delivery Systems (2.0 cr)
PUBH 6564 - Private Purchasers of Health Care: Roles of Employers and Health Plans in U.S. Health Care System (2.0 cr)
PUBH 6565 - Innovation of Healthcare Services (2.0 cr)
PUBH 6568 - Interprofessional Teamwork in Health Care (2.0 cr)
PUBH 6571 - Quality, Patient Safety, and Performance Improvement (2.0 cr)
PUBH 6577 - Advanced Problem Solving in Health Services Administration (2.0 cr)
PUBH 6589 - Medical Technology Evaluation and Market Research (2.0 cr)
PUBH 6601 - Born a Girl: Global Women's Health (1.0 cr)
PUBH 6605 - Sexual, Reproductive, and Perinatal Public Health (2.0 cr)
PUBH 6627 - Sexuality Education: Criteria, Curricula, and Controversy (1.0 cr)
PUBH 6630 - Foundations of Maternal and Child Health Leadership (3.0 cr)
PUBH 6730 - International Comparative Health Systems (2.0 cr)
PUBH 6732 - Topics and Methods in Global Health Assessment (2.0 cr)
PUBH 6852 - Program Evaluation in Health and Mental Health Settings (2.0 cr)
PUBH 6906 - Global Nutrition (2.0 cr)

-OR-

Exposure Science (17 credits)

The Exposure Science emphasis is restricted to Plan B only.

Required Coursework (13 credits)

Take the following courses to complete the 31 total credits required for this emphasis.

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6162 - Biomarkers (2.0 cr)
PUBH 6175 - Environmental Measurements Laboratory (2.0 cr)
PUBH 6190 - Environmental Chemistry (3.0 cr)
PUBH 6192 - Measurement and Properties of Air Contaminants (2.0 cr)
PUBH 6193 - Advanced Topics in Human Exposure Science (2.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

PUBH 6141 - GIS & Spatial Analysis for Public Health (3.0 cr)
PUBH 6154 - Climate Change and Global Health Modeling (3.0 cr)
PUBH 6181 - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)

Risk Management

Take one course from the following list:

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 6123 - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

-OR-

Regulatory Toxicology and Risk Assessment (18 credits)

The Regulatory Toxicology and Risk Assessment emphasis is restricted to Plan B only.

Required Coursework (14 credits)

Take the following courses to meet the 32 credits required for this emphasis.

PUBH 6112 - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
PUBH 6159 - Principles of Toxicology I (2.0 cr)
PUBH 6160 - Principles of Toxicology II (3.0 cr)
PUBH 6161 - Regulatory Toxicology (2.0 cr)
PUBH 6162 - Biomarkers (2.0 cr)



[PUBH 8160](#) - Advanced Toxicology (2.0 cr)
[PUBH 8161](#) - Current Literature in Toxicology (1.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

[PUBH 6141](#) - GIS & Spatial Analysis for Public Health (3.0 cr)
[PUBH 6154](#) - Climate Change and Global Health Modeling (3.0 cr)
[PUBH 6181](#) - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)
[PUBH 6190](#) - Environmental Chemistry (3.0 cr)
[PUBH 6193](#) - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

[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 6123](#) - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

-OR-

Food Safety (19 credits)

Take the following courses to meet the 33 credits required for this emphasis. Take PUBH 7210 twice for a total of one credit.

Required Coursework (15 credits)

Students complete the following required courses. Students take PUBH 7210 two times.

[FSCN 5131](#) - Food Quality for Graduate Credit (3.0 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 6183](#) - Theory and Practice in Foodborne Disease Outbreak Detection, Investigation and Control (1.0 cr)
[PUBH 6385](#) - Epidemiology and Control of Infectious Diseases (2.0 cr)
[PUBH 7210](#) - Topics: Global Food Systems (0.5 cr)
[VMED 5180](#) - Ecology of Infectious Disease (3.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

[PUBH 6112](#) - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
[PUBH 6141](#) - GIS & Spatial Analysis for Public Health (3.0 cr)
[PUBH 6154](#) - Climate Change and Global Health Modeling (3.0 cr)
[PUBH 6162](#) - Biomarkers (2.0 cr)
[PUBH 6190](#) - Environmental Chemistry (3.0 cr)
[PUBH 6193](#) - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

[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 6123](#) - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

-OR-

Environmental Chemistry (13-16 credits)

The Environmental Chemistry emphasis can be completed as Plan A or Plan B.

Required Coursework (9 credits)

All students pursuing this emphasis take the following courses:

[CEGE 5541](#) - Environmental Water Chemistry (3.0 cr)
[EEB 5601](#) - Limnology (3.0 cr)
[PUBH 6190](#) - Environmental Chemistry (3.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

[PUBH 6112](#) - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)
[PUBH 6141](#) - GIS & Spatial Analysis for Public Health (3.0 cr)
[PUBH 6154](#) - Climate Change and Global Health Modeling (3.0 cr)
[PUBH 6162](#) - Biomarkers (2.0 cr)



[PUBH 6181](#) - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)

[PUBH 6193](#) - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

[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 6123](#) - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

Electives (0-3 credits)

Students pursuing the Plan B must take electives in addition to the required emphasis coursework to meet the 30-credit minimum. Select courses in consultation with the advisor. Other courses may be substituted with approval of the advisor and director of graduate studies.

[CEGE 4561](#) - Solids and Hazardous Wastes (3.0 cr)

[CEGE 8503](#) - Environmental Mass Transport (4.0 cr)

[CEGE 8542](#) - Chemistry of Organic Pollutants in Environmental Systems (3.0 cr)

[CEGE 8561](#) - Analysis and Modeling of Aquatic Environments I (3.0 cr)

-OR-

Injury and Violence Epidemiology and Prevention (16 credits)

The Injury and Violence Epidemiology and Prevention emphasis can be completed as Plan A or Plan B.

Required Coursework (12 credits)

All students pursuing this emphasis take the following courses:

[PUBH 6120](#) - Injury Prevention in the Workplace, Community, and Home (2.0 cr)

[PUBH 6123](#) - Violence Prevention and Control: Theory, Research, and Application (2.0 cr)

[PUBH 6342](#) - Epidemiologic Methods II (3.0 cr)

[PUBH 6451](#) - Biostatistics II (4.0 cr)

[PUBH 8120](#) - Occupational and Environmental Health Sciences Research Seminar (1.0 cr)

Environmental Health Requirement (4 credits)

Select at least one course from each of the following two course lists, in consultation with the advisor, to meet the 4-credit Environment Health requirement. A minimum grade of B- is required.

Integrated Exposure & Health Effects

Take one course from the following list.

[PUBH 6112](#) - Environmental Health Risk Assessment: Application to Human Health Risks from Exposure to Chemicals (2.0 cr)

[PUBH 6141](#) - GIS & Spatial Analysis for Public Health (3.0 cr)

[PUBH 6154](#) - Climate Change and Global Health Modeling (3.0 cr)

[PUBH 6162](#) - Biomarkers (2.0 cr)

[PUBH 6181](#) - Surveillance of Foodborne Diseases and Food Safety Hazards (2.0 cr)

[PUBH 6190](#) - Environmental Chemistry (3.0 cr)

[PUBH 6193](#) - Advanced Topics in Human Exposure Science (2.0 cr)

Risk Management

Take one course from the following list:

[PUBH 6115](#) - Worker Protection Law (1.0 cr)

[PUBH 6116](#) - Environmental Law (1.0 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

The Environmental Health MS with the Industrial Hygiene (IH) track is a 52-credit program that focuses on 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.

The MS-IH track program is accredited by the Applied Science Accreditation Commission of ABET, <http://www.abet.org>.

The Industrial Hygiene track is restricted to Plan B only.

Industrial Hygiene Required Courses (21 credits)

Take the following courses:

[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 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)

Applied Practice Experience (3 credits)

Take the following course in consultation with the advisor.

[PUBH 7196](#) - Applied Practice Experience: Environmental Health (1.0 - 5.0 cr)

Electives (9 credits)

Select electives from the following list, in consultation with the advisor, to complete the 52-credit minimum. Other courses may be substituted with approval of the advisor and director of graduate studies.

[PUBH 6020](#) - Fundamentals of Social and Behavioral Science (2.0 cr)

[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 6162](#) - Biomarkers (2.0 cr)

[PUBH 6177](#) - Nanotechnology Health and Safety (3.0 cr)

[PUBH 6182](#) - Emerging Infectious Disease: Current Issues, Policies, and Controversies (3.0 cr)

[PUBH 6190](#) - Environmental Chemistry (3.0 cr)

[PUBH 6451](#) - Biostatistics II (4.0 cr)

[PUBH 6751](#) - Principles of Management in Health Services Organizations (2.0 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)

[PA 5721](#) - Energy Systems and Policy (3.0 cr)

[CMGT 4031](#) - Construction Safety and Loss Control (3.0 cr)