Occupational and Environmental Health Sciences

Degrees Offered

- Master of Public Health
- Doctor of Philosophy

Nature of the Program

MPH IN OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES

The MPH degree with a major in Occupational and Environmental Health Sciences provides students with the practical skills needed to solve occupational and environmental health problems. Students will focus on understanding occupational and environmental processes and their effects on humankind, as well as developing the skills needed to assess and address their health consequences.

Upon completion of the MPH degree with a major in Occupational and Environmental Health Sciences, students will be prepared to either continue their graduate education at the doctoral level or begin a career as consultants, managers, and leaders in public health practice, research settings, government, or industry, addressing such issues as environmental pollution related to air, water, and waste, occupational health hazards, and work-related injury. The degree and major are ideal for recent college graduates or early to mid-career public health professionals seeking to develop or advance their current careers.

PH.D. IN PUBLIC HEALTH SCIENCES (OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES MAJOR)

The Ph.D. in Public Health Sciences, Occupational and Environmental Health Major, is a degree for scientist-practitioners in the area of prevention of premature mortality, morbidity and disability resulting from occupational and environmental exposures, communicable and chronic disease, and injury. This degree emphasizes both evidence-based primary prevention of disease and injury, as well as health promotion research and practice. Students completing this degree will have the necessary theoretical knowledge and critical understanding of occupational and environmental health problems, including analytical and methodological research skills, to investigate, evaluate and find solutions to public health challenges. To this end, students should expect rigorous course work and training typical of a Ph.D. program.

The Department of Occupational and Environmental Sciences has a close collaboration with the National Institute of Occupational Safety and Health (NIOSH), which shares our Health Sciences campus in Morgantown. Collaborating NIOSH faculty add important enrichment and mentorship potential for the interested student.

FACULTY

CHAIR
- Weimin Gao - PhD (University of Pittsburgh)

PROFESSORS
- Lan Guo - PhD (West Virginia University)
- Christopher Martin - MD (Memorial University of Newfoundland)

ASSOCIATE PROFESSORS
- Anna Allen - MPH, MD (West Virginia University)
- Robert Gerbo - MD (West Virginia University)
- Chuanfang Jin - MD (Shanxi Medical University)
- Douglas Myers - ScD (University of Massachusetts Lowell)
- Kimberly Rauscher - ScD, MA (University of Massachusetts Lowell)

CLINICAL ASSOCIATE PROFESSOR
- Michael McCawley - PhD (New York University)

ASSISTANT PROFESSORS
- Travis Knuckles - PhD (North Carolina State University)
- Jennifer Lultschik - MD (University of Toronto Faculty of Medicine)
Admissions

If you are ready to apply to the West Virginia University School of Public Health, the admissions team is here to assist you.

**MASTER OF PUBLIC HEALTH (MPH) IN OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES**

*ADMISSION GUIDELINES*

- Baccalaureate degree from an accredited college or university with a preferred overall GPA of 3.0.
- GRE scores of 150 Verbal (preferred), 147 Quantitative (preferred), and 3.0 Analytical Writing.
- *International Students Only:* TOEFL scores: minimum 550 paper-based or 213 computer-based.

*APPLICATION PROCESS*

Our CEPH accredited Master of Public Health program participates in the Schools of Public Health Application Service (SOPHAS), http://www.sophas.org/. The MPH Admissions process has two steps: (1) All MPH applications must be submitted through the national SOPHAS service and (2) applicants must also submit a WVU Graduate application, https://graduateadmissions.wvu.edu/.

In addition to the application, applicants must submit to SOPHAS a statement of purpose and objectives, official GRE test scores, three letters of reference, a current resume/curriculum vitae, and all university transcripts. SOPHAS requires original transcripts from ALL U.S. and International institutions attended (even Study Abroad).

There is a SOPHAS application fee. Applicants must indicate their first choice of MPH major and may also indicate a second choice. A maximum of two choices is allowed.

- E-submit your application as soon as the applicant entered information is complete. Do NOT wait for SOPHAS to receive transcripts, recommendations or test scores.
- Plan Ahead! Allow up to 4 weeks for SOPHAS to verify grades, process, and mail your application to your designated institutions after your documents have been received.
- SOPHAS grants fee waivers based upon financial need for Peace Corps Volunteers, McNair Scholars, Gates Millennium Scholars Program, AmeriCorps, U.S., and International applicants.

Once the department has reviewed the SOPHAS application, students will receive a communication from the WVU School of Public Health regarding their recommendation for acceptance and instructions to complete the WVU graduate application and pay the application fee.

*Important: When sending GRE scores for consideration for admission to WVU, please use the WVU School of Public Health College GRE code: 0157. This code MUST be used, otherwise, your GRE score will not be reported to SOPHAS and your application will be incomplete. Incomplete applications cannot be reviewed for an admissions decision. [Each program at West Virginia University has a specific code.]*

**DOCTOR OF PHILOSOPHY (PH.D.) IN PUBLIC HEALTH SCIENCES (OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES MAJOR)**

*ADMISSION GUIDELINES*

- A Master's degree in Public Health or a closely related field is strongly preferred. Exceptional applicants with a Bachelor's degree in a relevant field may also be considered.
- A minimum GPA of 3.0 is required, 3.5 is preferred.

- The following GRE scores are preferred: Verbal 150; Quantitative 155; and Writing 3.5.
- WVU requires international students to submit TOEFL scores. Preferred scores are as follows: 550 on the paper-based test; 213 on the computer-based test; and 80 on the internet-based test.
APPLICATION PROCESS

Applying to the Ph.D. program is a two-step process in which prospective students first submit an application through the national SOPHAS service, http://www.sophas.org/. If you are accepted into the PhD program by the School, the next step is for you to complete a WVU Graduate Application, https://graduateadmissions.wvu.edu/.

The SOPHAS application requires:

• Official test scores
• Official transcripts from all US institutions attended
• A Personal Statement
• 3 Letters of Recommendation
• Current CV/Resume

Applicants must indicate their first choice of Major and may indicate a second choice (you are allowed a maximum of two choices).

There is a SOPHAS application fee. However, SOPHAS grants fee waivers based upon financial need for McNair Scholars, Gates Millennium Scholars, as well as for AmeriCorps and Peace Corps Volunteers.

TIPS for completing the SOPHAS application:

• APPLY EARLY! Allow up to 4 weeks for SOPHAS to verify your transcripts and test scores and send them to the Universities to which you have applied. Your application may not be reviewed if it does not contain verified transcripts and test scores.
• When submitting your GRE scores, be sure to use the college code 0157 for the WVU School of Public Health. This code MUST be used so that verified scores are sent by SOPHAS to the WVU School of Public Health for review.
• Submit your application once you have provided the required information. DO NOT wait for SOPHAS to receive transcripts, recommendations or test scores prior to submitting your application.

Personal Statement

The Personal Statement is a critical piece of the application. The content of the Statement and the applicant’s writing skills will be evaluated in the admissions decision. The Statement should address the following in no more than 1000 words:

• What is it about Public Health that interests you?
• What is it about your selected major, specifically, that interests you?
• What are your career goals?
• What topics or areas of research do you wish to pursue and why? If you have identified a potential dissertation topic, briefly describe that as well.
• Which faculty members in the SPH do you see as being potential mentors to help you succeed in your area of interest?

Applicants should also include any additional information about their interests, background, prior experience, or special circumstances that may be helpful to the SPH Admissions Committee.

Letters of Recommendation

Three letters of recommendation are required. At least two of these should be from people who can attest to your academic abilities.

Deadlines

Please refer to SOPHAS for the current deadline. Applications received after this deadline will not be considered. All admissions are for the Fall semester. We do not admit students into the Ph.D. program in the Spring or Summer semesters.

Review process

All completed and verified SOPHAS applications are first reviewed by the Admissions Committees of the major to which an applicant has applied (EPID, OEHS, or SBHS). Candidates that are recommended for admission at this level, are put forth to the SPH Doctoral Admissions Committee, which makes the final decisions on admissions and funding.

Advanced Standing for Applicants with a Master’s Degree

Students who enter the Ph.D. program with an MPH or approved Master’s degree are eligible for Advanced Standing. This allows students to complete an abbreviated course of study that takes between 2 and 3 years to complete, depending on the student’s past course work and current interests.

Master of Public Health

MPH Major in Occupational and Environmental Health Sciences Description
The MPH degree with a major in Occupational and Environmental Health Sciences provides students with the practical skills needed to solve occupational and environmental health problems. Students will focus on understanding occupational and environmental processes and their effects on humankind, as well as developing the skills needed to assess and address their health consequences.

Upon completion of the MPH degree with a major in Occupational and Environmental Health Sciences, students will be prepared to either continue their graduate education at the doctoral level or begin a career as consultants, managers, and leaders in public health practice, research settings, government, or industry, addressing such issues as environmental pollution related to air, water, and waste, occupational health hazards, and work-related injury. The degree and major are ideal for recent college graduates or early to mid-career public health professionals seeking to develop or advance their current careers.

**Occupational and Environmental Health Sciences Major Competencies**

In addition to the standard MPH Foundational Competencies required of all MPH students, our major in Occupational and Environmental Health Sciences also prepares students to meet five competencies specific to the major. These include:

1. Assess the potential for problems in an occupational or environmental setting.
2. Assess methodologies of primary and secondary prevention for environmental health issues.
3. Discern appropriate methods for the control of occupational hazards.
4. Assess the basic principles and applications within the science of toxicology.
5. Contrast the strengths and weaknesses of the occupational injury surveillance systems used in the US.

**MAJOR REQUIREMENTS**

A final GPA of 3.0 or higher is required for the successful completion of the program. Students must earn a minimum grade of "C-" in all PUBH and OEHS coursework.

**MPH Foundational Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PUBH 610</td>
<td>Contemporary Foundations of Public Health Practice</td>
<td>2</td>
</tr>
<tr>
<td>PUBH 611</td>
<td>Epidemiology for Public Health Practice</td>
<td>2</td>
</tr>
<tr>
<td>PUBH 612</td>
<td>Research Translation and Evaluation in Public Health Practice</td>
<td>4</td>
</tr>
<tr>
<td>PUBH 620</td>
<td>Building and Sustaining Public Health Capacity</td>
<td>2</td>
</tr>
<tr>
<td>PUBH 621</td>
<td>Public Health Prevention and Intervention</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 630</td>
<td>MPH Field Practicum</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 640</td>
<td>Leadership and Collaboration in Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 641</td>
<td>Systems Thinking in Public Health Practice</td>
<td>2</td>
</tr>
<tr>
<td>PUBH 696</td>
<td>Graduate Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**OEHS Major Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS 610</td>
<td>Environmental Practice</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 620</td>
<td>Occupational and Environmental Hazard Assessment</td>
<td>4</td>
</tr>
<tr>
<td>OEHS 622</td>
<td>Public Health Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 623</td>
<td>Occupational Injury Prevention</td>
<td>3</td>
</tr>
<tr>
<td>Capstone</td>
<td></td>
<td>2</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS 629</td>
<td>Capstone</td>
<td></td>
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**Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS Electives Approved by the MPH Program Advisor (May include additional hours of PUBH 630)</td>
<td>4</td>
</tr>
<tr>
<td>Other Electives Approved by the MPH Program Advisor</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Hours** 44

1. All students in the WVU SPH MPH program are required to maintain a portfolio that demonstrates their ability to meet the competencies associated with the MPH Foundational Courses, the Department Major Courses, and to apply a selection of those competencies in an approved practice-based setting(s). This portfolio must be submitted for review at the end of each academic year, as well as reviewed and approved prior to the successful completion of the program.

2. The MPH degree will be awarded based on successful completion of all academic requirements and demonstrated achievement of competencies via the student portfolio system and class-based evaluations of competency attainment.
**SUGGESTED PLAN OF STUDY**

### First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
<th>Summer</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBH 610</td>
<td>2</td>
<td>PUBH 620</td>
<td>2</td>
<td>PUBH 630</td>
<td>3</td>
</tr>
<tr>
<td>PUBH 611</td>
<td>2</td>
<td>PUBH 621</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PUBH 612</td>
<td>4</td>
<td>OEHS 610</td>
<td>4</td>
<td>OEHS 622</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 620</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td></td>
<td></td>
<td>3</td>
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</tr>
</tbody>
</table>

### Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBH 640</td>
<td>3</td>
<td>PUBH 696</td>
<td>1</td>
</tr>
<tr>
<td>PUBH 641</td>
<td>2</td>
<td>OEHS 629</td>
<td>2</td>
</tr>
<tr>
<td>OEHS 623</td>
<td>3</td>
<td>Elective</td>
<td>5</td>
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<tr>
<td>Elective</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

Total credit hours: 44

*Note: With approval from the MPH Program Advisor and the Director of Practice-Based Learning, PUBH 630: MPH Field Practicum can be taken anytime during Year 2.*

### CULMINATING EXPERIENCE/CAPSTONE

OEHS 629 Capstone is generally to be taken in the last semester of study. In the Capstone, students are required to demonstrate the ability to synthesize and integrate knowledge and competencies across the full breadth of the MPH-OEHS curriculum.

### COMPETENCY ASSESSMENT

The MPH degree will be awarded based on successful completion of all academic requirements and demonstrated achievement of the competencies listed above. The OEHS department chair, with input from the OEHS faculty, will review competency performance evidence and determine if the student has achieved the expected competencies. If a determination is made that competencies have not been achieved, the department chair will inform the student of what must be accomplished in order for him/her to demonstrate competency achievement and therefore be recommended for awarding of the MPH degree. This may include taking additional courses.

### Doctor of Philosophy

#### MAJOR REQUIREMENTS

Below are the minimum requirements for the PhD in Public Health Sciences in OEHS. Some students entering the program with a departmentally approved Master’s degree may be eligible to enter with “Advanced Standing” and be able to complete an abbreviated version of the curriculum per the School of Public Health academic policies. The minimum requirements for students entering with Advanced Standing are found in the below section, “Program Requirements for Students Entering with Advanced Standing.”

**Program Requirements for Students Entering with a BA/BS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS 601</td>
<td>Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>EPID 601</td>
<td>Public Health Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 601</td>
<td>Applied Biostatistics 1</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 602</td>
<td>Applied Biostatistics Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOS 603</td>
<td>Applied Biostatistics 2</td>
<td>3</td>
</tr>
<tr>
<td>SBHS 601</td>
<td>Social and Behavioral Theory</td>
<td>3</td>
</tr>
<tr>
<td>HPML 601</td>
<td>Foundations of Health Policy</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 610</td>
<td>Environmental Practice</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 620</td>
<td>Occupational and Environmental Hazard Assessment</td>
<td>4</td>
</tr>
<tr>
<td>OEHS 622</td>
<td>Public Health Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 623</td>
<td>Occupational Injury Prevention</td>
<td>3</td>
</tr>
<tr>
<td>EPID 769</td>
<td>Occupational Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 733</td>
<td>Organizational Theories of Injury and Disaster Prevention</td>
<td>3</td>
</tr>
<tr>
<td>OEHS 796</td>
<td>Graduate Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>
### Graduation Seminar

- **OEHS 796** Graduate Seminar 1
- **BMS 700** Scientific Integrity 1
- **BMS 720** Scientific Writing 2
- **OEHS 790** Teaching Practicum 1

### Electives

- Electives 12
- 2 Research Rotations (OEHS 797) 2
- Qualifying Examination - written and oral components 0
- Dissertation Proposal and Its Defense 0
- Dissertation Research (OEHS 797 - min credit number shown) 25
- Dissertation Defense 0

**Total Hours**: 83

*Note: Students may elect to replace SBHS 601 & HPML 601 with PUBH 659 Foundations of Public Health, which is an overview course that covers concepts in both SBHS and HPML as well as the other SPH majors. Students who replace the two 601 courses with the PUBH 659 course, will need to complete an additional 3 credits.*

### Program Requirements for Students Entering with Advanced Standing

Students entering the OEHS PhD program with advanced standing will complete the minimum program requirements listed below. Additional courses may be needed depending on the student’s degree and prior coursework. Students with advanced standing will need to work with their advisor to determine their ultimate course of study.

- **BIOS 603** Applied Biostatistics 2 3
- **EPID 769** Occupational Epidemiology 3
- **OEHS 733** Organizational Theories of Injury and Disaster Prevention 3
- **OEHS 796** Graduate Seminar 1
- **OEHS 796** Graduate Seminar 1
- **BMS 700** Scientific Integrity 1
- **BMS 720** Scientific Writing 2
- **OEHS 790** Teaching Practicum 1
- Electives 12
- 2 Research Rotations (OEHS 797) 2
- Qualifying Examination - written and oral components 0
- Dissertation Proposal and Its Defense 0
- Dissertation Defense (OEHS 797 - min credit number shown) 25
- Dissertation Defense 0

**Total Hours**: 54

### ELECTIVES

Students will complete a minimum of twelve credit hours of electives during their PhD program. These may be selected from among the many offerings of the OEHS department, the SPH, or the university. The selection of these courses must be discussed with and approved by the student’s advisor.

### TEACHING PRACTICUMS

Students will complete a 1 credit teaching practicum (OEHS 790) during which they will spend time in a mentored relationship with a faculty member, assisting with the administration and teaching of a course. These may be graduate or undergraduate level courses. Students who have a strong interest in teaching should also consider taking C&I 789 Teaching in Higher Education (3 credits). This is a general methods course involving instructional concepts and strategies for present/prospective faculty in higher education. Students without a strong interest in teaching may request a waiver of the teaching practicum requirement.

### DISSERTATION COMMITTEE

It is incumbent upon students to form a dissertation committee. This committee will oversee the student’s dissertation research. Below are the requirements for the make-up of this committee:

- Committees must consist of no fewer than four members;
- At least three members must be affiliated with the School of Public Health
- At least two members must have their primary appointment in the OEHS department
At least one member must be from a department other than the one in which the student is seeking a degree.

The majority of members must have regular graduate faculty membership. No more than one person may be a nonmember of the graduate faculty.

The chairperson of the committee must have a doctoral degree, be a faculty member of or affiliated with the SPH (NIOSH included), and hold regular graduate faculty status.

Any changes in committee membership require approval of the dean or designee of the college or school.

QUALIFYING EXAM

The qualifying examination is the capstone experience for the OEHS PhD program. Successful completion of the examination signifies competence in the field of occupational and environmental health sciences and indicates readiness to engage in independent research. Following completion of the majority of the PhD coursework, students are then eligible to take the qualifying examination, which consists of two components, a written exam and an oral defense as follows:

Written exam: The written exam consists of questions related to occupational and environmental health sciences generally as well as those pertinent to the student’s research focus.

Oral defense: The oral component consists of a defense of student’s answers to the written exam and includes additional questions that further test the student’s understanding of key concepts in occupational and environmental health sciences and knowledge specific to the student’s research focus. The oral defense of the written exam must be attempted within two academic weeks of completing the written exam. Note: Students are not eligible to begin their dissertation, or sign up for dissertation credits, until they have successfully completed both components of the qualifying examination.

RESEARCH

The research component of the OEHS PhD program consists of both a dissertation (25 credits, minimum) and completion of two research rotations (2 credits).

Research Rotations: Students will complete two research rotations (1 credit each) in which they will work with research faculty with similar interests to the student’s in order to identify potential mentors for their dissertation research. For students who have already identified a mentor, the research rotation requirements may be replaced by other credits.

Dissertation: Students will complete a dissertation in which they design and conduct an original work of research. First, students will develop a proposal for an original research project. This proposal will be presented and defended orally before the student’s dissertation committee. Upon successful completion of the proposal defense, students are admitted to PhD candidacy and may then complete their dissertation research. There are two options for the dissertation format, a traditional book format or a three Journal Article Format (JAF). The decision of which format to use is something that students should discuss with their committee chairperson. Regardless of the format selected, students must have a minimum of one first-authored publication based on their dissertation topic area, at least under review in a peer-reviewed journal before they can defend their dissertation. While the required publication may come from one of the student’s three dissertation articles if using the JAF, this is not mandatory. Upon completion of the written dissertation, the student will present and defend their work before the dissertation committee. Note: The dissertation defense is open to all members of the WVU community and the public.

University Doctoral Degree Requirements: For further details on WVU’s requirements for Doctoral programs please visit the following website: http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/.

PLAN OF STUDY

Upon matriculating into the PhD program, students should contact the OEHS PhD Program Director, or their advisor if already identified, to discuss the course requirements and to develop a plan of study (POS) to meet their individual needs. Below is a suggested POS with the minimum requirements for students entering the program with a BA/BS. Note: Research credits show below reflect the minimum requirements. Students may enroll in additional research credits as necessary to achieve the degree competencies.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Spring</th>
<th>Hours Summer</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS 601</td>
<td>3 HPML 601</td>
<td>3 BMS 720</td>
<td>2</td>
</tr>
<tr>
<td>OEHS 620</td>
<td>4 SBHS 601</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EPID 601</td>
<td>3 BIOS 603</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOS 601</td>
<td>3 OEHS 610</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOS 602</td>
<td>1 OEHS 622</td>
<td>3</td>
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<tr>
<td></td>
<td>14</td>
<td>15</td>
<td>2</td>
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<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Spring</th>
<th>Hours Summer</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEHS 623</td>
<td>3 OEHS 733</td>
<td>3 OEHS 797 (Research Rotation)</td>
<td>1</td>
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</table>
Major Learning Outcomes

OCCUPATIONAL AND ENVIRONMENTAL HEALTH SCIENCES

MPH Competencies for the OEHS Major

- Assess the potential for problems in an occupational or environmental setting.
- Assess methodologies of primary and secondary prevention for environmental health issues.
- Discern appropriate methods for the control of occupational hazards.
- Assess the basic principles and applications within the science of toxicology.
- Contrast the strengths and weaknesses of the occupational injury surveillance systems used in the US.

DOCTOR OF PHILOSOPHY

Program Competencies

- Develop effective strategies for teaching in higher education
- Review and synthesize pertinent literature and formulate focused research questions that address identified knowledge gaps
- Design and conduct original research that uniquely contributes to the public health scientific knowledge
- Disseminate research findings through appropriate peer-reviewed publications and presentations, and to other public health community audiences

Major Competencies

- Analyze issues and problems in occupational and environmental health and safety using critical evaluation, applied research methodology, and statistical methods
- Characterize the human health effects of major environmental and occupational hazards, both acute and chronic, including: air pollution, contamination of drinking water, and physical hazards
- Analyze sources, pathways, and routes of exposure to environmental and occupational hazards, identify populations at high risk of exposure, and communicate that risk effectively
- Create programs that protect the environment using proven technologies and novel approaches

COURSES

OEHS 601. Environmental Health. 3 Hours.
A review of issues illustrating responsibilities and roles of public health work force in identifying, managing and preventing casualties from environmental causes in air, water, soil, food, pesticides, and related subjects. WV policy dilemmas.
OEHS 610. Environmental Practice. 3 Hours.
The course involves application of Public Health principles to the planning and operation of drinking water, sewage disposal, solid and hazardous waste management, air pollution and general community sanitation.

OEHS 620. Occupational and Environmental Hazard Assessment. 4 Hours.
Lecture and laboratory experience to understand occupational and environmental hazards related to the workplace. Principles from chemistry, physics and biology are used quantitatively. This course provides an overview of various industrial hygiene concepts.

OEHS 622. Public Health Toxicology. 3 Hours.
This interdisciplinary course will survey the principles of toxicology that pertain to human health and the environment, and the integration of these principles into public health practice.

OEHS 623. Occupational Injury Prevention. 3 Hours.
This course introduces students to the problem of occupational injury. It covers the epidemiology of occupational injury and provides a critical perspective on injury causation and the strategies used to prevent occupational injury. This course is also listed as OEHS 732 - students may not count both toward degree requirements.

OEHS 626. Internship. 1-6 Hours.
PR: Consent. (May be repeated for a maximum of 6 credit hours.) The internship provides students the opportunity to develop their practical skills and enhance professional competencies by applying the knowledge and techniques gained from their MPH coursework to public health practice.

OEHS 629. Capstone. 2 Hours.
This course is the culminating experience for OEHS Master's students through which they will demonstrate their ability to integrate and synthesize the MPH and OEHS competencies in relation to the occupational/environmental public health problem on which their Practice-based Experience (PBE) was focused.

OEHS 630. Public Health Biology. 3 Hours.
This course will provide students with a fundamental understanding of Public Health Biology, which comprises a wide range of concepts including: human physiology, infectious and non-infectious disease, mechanisms of disease pathology, toxicology, and population health disparities. The students will learn underlying and advanced knowledge of human physiology and its role in public health.

OEHS 665. Worksite Evaluation. 2 Hours.
Students are introduced to health and safety hazards associated with industrial operations through in-plant inspections, interaction with plant medical and safety staff, and in-class discussions.

OEHS 691. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation in advanced topics that are not covered in regularly scheduled courses.

OEHS 695. Independent Study. 1-6 Hours.
Faculty-supervised study of topics not available through regular course offerings.

OEHS 696. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

OEHS 723. Emergency and Disaster Response. 3 Hours.
This course addresses the basics of how public health practitioners respond to disasters, develop response protocols, and perform as skillful public health leaders.

OEHS 732. Occupational Injury Prevention. 3 Hours.
This course introduces students to the problem of occupational injury. It covers the epidemiology of occupational injury and provides a critical perspective on injury causation and the strategies used to prevent occupational injury.

OEHS 733. Organizational Theories of Injury and Disaster Prevention. 3 Hours.
This course will discuss how aspects of work organization shape workplace injury patterns and modify the risk of organizational disasters. Social and organizational theories and contemporary perspectives of safety will be presented and used to illustrate how to reduce the occurrence of work-related injuries as well as the risk of organizational disasters.

OEHS 734. Aerosols and Health. 3 Hours.
This course will give an understanding of the basic principles behind aerosol generation, measurement, mechanics and toxicity for aerosols found in the environment and their application to health effects caused by exposure to these aerosols.

OEHS 742. Outbreak Assessment. 3 Hours.
This course covers environmental and epidemiologic principles and concepts within the context of case studies associated with disease outbreaks.

OEHS 770. Molecular Diagnosis Public Health. 3 Hours.
This course gives an overview of the interdisciplinary approaches in molecular diagnosis and prognosis for personalized patient care. Knowledge of genome-wide association studies will guide hypothesis-driven experimentation and aid clinical decision-making.

OEHS 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of OEHS. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It also provides a mechanism for students not on assistantships to gain teaching experience.
OEHS 795. Independent Study. 1-9 Hours.
PR: Consent. Faculty-supervised study of topics not available through regular course offerings.

OEHS 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

OEHS 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)