In addition to the school-wide competencies, for students pursuing the MPH degree in Environmental and Occupational Health Sciences, the following competencies apply:

- Demonstrate an understanding of the basic mechanisms by which environmental and occupational pollutants impact health (i.e., the linkage of pollutants’ source, media, receptor and health effects) and the means to develop controls or interventions to protect humans and ecological systems.
- Express a working knowledge of the basic sciences deemed most relevant for the study of environmental and occupational health – toxicology, epidemiology and environmental chemistry.
- Be able to collect, analyze and interpret environmental and occupational data.
- Describe the structure of regulations and policies that govern the efforts to protect workplace and environmental health.
- Exhibit the ability to implement an occupational or environmental health investigation or project and clearly report the results.

**ABET-ACCREDITED PROGRAM IN INDUSTRIAL HYGIENE**

In addition to the EOHS MPH competencies, students in the ABET-Accredited Industrial Hygiene concentration have both applied science and industrial hygiene competencies. For applied science knowledge and skills, students will be able to:

1. Apply knowledge of mathematics, science, and applied sciences
2. Design and conduct experimental investigations
3. Analyze and interpret data
4. Formulate or design a system, process, or program to meet desired needs
5. Function on multidisciplinary teams.
6. Identify and solve applied science problems
7. Demonstrate professional and ethical responsibility
8. Communicate effectively
9. Describe the impact of solutions in a global and societal context
10. Recognize the need for engaging in life-long learning
11. Discuss and critique contemporary issues relevant to environmental and occupational health
12. Use the techniques, skills, and modern scientific and technical tools necessary for professional practice

For industrial hygiene knowledge and skills, students will be able to:

1. Identify agents, factors, and stressors generated by, or associated with, defined sources, unit operations, or processes
2. Describe qualitative and quantitative aspects of generation of agents, factors, and stressors
3. Recognize, analyze, and evaluate the physiological and toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and stressors with the human body

4. Apply qualitative and quantitative methods to assess exposures through multiple routes of entry

5. Understand dose-response models and regulatory approaches to risk assessment

6. Integrate exposures with dose-response models to estimate health risk through multiple routes of entry

7. Compare exposure and risk estimates with guidelines and regulations to characterize the magnitude of health hazard

8. Employ statistical methods to analyze and interpret data

9. Apply epidemiologic methods to interpret exposure-health outcome relationships

10. Recommend and evaluate engineering, administrative, and personal protective equipment controls and other interventions to reduce or eliminate hazards

11. Apply management practices to health and safety programs

12. Be able to make a business case for workplace health and safety

13. Interpret and apply occupational and environmental regulations

14. Appreciate and apply a multidisciplinary perspective that includes occupational safety, occupational medicine, occupational health nursing, environmental health, occupational and environmental epidemiology, and injury prevention

15. Recognize the importance of lifelong learning and attaining professional certification

16. Describe conceptual models used in the assessment, evaluation, and control of occupational hazards

17. Apply conceptual and mathematical models to the assessment, evaluation, and control of occupational hazards

**ENVIRONMENTAL AND OCCUPATIONAL HEALTH POLICY**

In addition to the Environmental and Occupational Health Sciences MPH competencies, students in the Environmental and Occupational Health Policy concentration will be able to:

- Explain the structure of regulations and policies that govern the efforts to protect the environment and worker health, including the legal and economic principles that influence the development of such protections at different levels of government.
- Demonstrate the ability to evaluate an environmental health policy problem, identify relevant stakeholders including government, businesses, community groups, and individuals, and communicate effectively with them and with the media.
**OCCUPATIONAL SAFETY**

In addition to the Environmental and Occupational Health Sciences MPH competencies, students in the Occupational Safety concentration will be able to:

- Evaluate workplace safety hazards and anticipate related adverse health consequences.
- Utilize exposure and injury data as the basis for developing solutions to workplace safety hazards.

**WATER QUALITY AND HEALTH**

In addition to the Environmental and Occupational Health Sciences MPH competencies, students in the Water Quality and Health concentration will be able to:

- Evaluate water quality impairment and anticipate related adverse health consequences.
- Utilize water quality data, geographic information, and regulatory requirements as the basis for developing solutions to impairments in water quality.