Program Educational Objectives

We anticipate that within 5 years following graduation, our graduates will be working as leaders within a related field of Environmental and Industrial Hygiene. University of Cincinnati Environmental and Industrial Hygiene graduates will:

- Demonstrate a high level of technical and scientific competence in the anticipation, recognition, evaluation, and control of occupational and environmental exposures, including the development of long-¬range goals and programs.
- May include participation in global professional activities.
- Communicate effectively regarding potential hazards, risk reduction approaches, and required actions within the health and safety team.
- Apply the professional code of ethics in all aspects of your practice.
- Be involved in continuous improvement by enrolling in continuing education courses and experiences, seeking professional certification, and by being active in professional organizations such as ACGIH, ASSE, and AIHA.

Student Outcomes

The program-specific student outcomes developed by the faculty are associated with an ABET-ASAC outcome. Below are listed the ABET-ASAC outcomes (A-K, extended to L by program personnel), followed by the program-specific outcome(s) in effect for the 2006 to 2018, updated in 2018, and reviewed in the 2023-2024 academic year:

A. Identify agents, factors, and stressors generated by and/or associated with defined sources, unit operations, and/or processes:

1. Identify potential health hazards of workplace processes and operations

B. Describe qualitative and quantitative aspects of the generation of agents, factors, and stressors:

1. Describe the underlying processes of the generation of hazards in occupational and environmental settings; Describe qualitative and quantitative aspects of hazards associated with specific occupational or environmental sources

C. Identify physiological and/or toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and/or stressors with the human body:

1. Illustrate the relation between exposures and health outcomes;
2. Compare and contrast the potential for differences in response to hazards due to personal factors among some subjects at risk of exposure and the subsequent need to modify programs and practices

D. Assess qualitative and quantitative aspects of exposure assessment, dose-response, and risk characterization based on applicable pathways and modes of entry:

1. Describe how to evaluate potential adverse outcomes of chemical or physical exposures, based on the similarity of the exposure to documented hazards
2. Describe occupational hygiene aspects of emerging technologies
3. Describe the basic principles of conducting sampling and analysis for exposure assessment
4. Describe the basic principles of evaluating engineering and non-engineering controls to reduce exposure
5. Develop and implement an exposure assessment plan to evaluate potential hazards and existing controls
6. Gather, manage, and analyze quantitative (e.g., measurements of exposure or system performance) and qualitative (e.g., written programs) data to evaluate potential hazards and existing controls to reduce risk

E. Calculate, interpret, and apply statistical and epidemiological data:

1. Apply epidemiologic and/or statistical concepts to the interpretation of exposure data

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

1. Identify and recommend appropriate methods to reduce exposure (using engineering controls, personal protective equipment, or administrative controls) or deficiencies in written programs and policies

2. Design work process/practice interventions

G. Demonstrate an understanding of applicable business and managerial practices:

1. Produce accurate oral and written reports, including descriptions of occupational processes and activities, exposure assessment plans, and evaluation of occupational and environmental work settings
2. Describe approaches to interact with higher-level decision-makers in various management structures
3. Manage resources effectively
4. Display effective leadership

H. Interpret and apply applicable occupational and environmental regulations:

1. Interpret and apply occupational and environmental regulations

I. Apply guidelines, standards, and laws in interpreting qualitative and quantitative data for exposure assessment for risk characterization

J. Demonstrate an understanding of the fundamental aspects of safety and environmental health

1. Apply the professional code of ethics to a scenario

K. Attain recognized professional certification

1. Explain the importance of ethics in the practice of environmental and industrial hygiene
2. Demonstrate the need for and resources available for continuing professional development after graduation
3. Describe the requirements to obtain professional certification

L. Conduct a research activity resulting in a report that demonstrates mastery of the subject and a high level of professional and public communications skills

1. Design a research question, develop a plan, and conduct research as part of a thesis
2. Communicate effectively with a variety of stakeholders (e.g., workers, labor representatives, management, government, peers, safety and health professionals, and allied professionals)
3. Produce a technical scientific report on research

M. Demonstrate advanced qualitative and quantitative problem-solving skills

1. Function effectively as part of a multidisciplinary team to Investigate and propose a solution to an exposure hazard in a workplace