

University of Minnesota Industrial Hygiene Program Educational Objectives

Industrial hygienists are expected to apply and communicate knowledge of hazards and risks, with cultural competence and by putting guidelines, regulations, and policies into practice, to reduce unsafe exposures and promote healthy working conditions. Accordingly, the educational objectives of the Industrial Hygiene Master's Program are to produce graduates who, within three years of graduation, are able to:

- a. Demonstrate a high level of technical and scientific competence in anticipating, recognizing, evaluating, and controlling occupational and environmental risks.
- b. Solve complex problems through a combination of observation, communication, literature review, measurement, modeling, and data analysis.
- c. Communicate effectively with a wide range of constituents using spoken, written, and visual methods across multiple platforms with sensitivity toward diversity, equity, and inclusion.
- d. Design and develop long-range goals and programs.
- e. Act and behave responsibly and ethically according to professional standards and codes of conduct.
- f. Interact competently and professionally at all levels of an organization, working as a fully contributing member of a team and conducting independent work responsibilities confidently.
- g. Seek work experience and on-going education for their professional advancement leading to professional certification.
- h. Use their knowledge and skills to benefit the community in recognizing work and environmental risks and educating those responsible for managing these risks.

University of Minnesota Industrial Hygiene Program Student Outcomes

In the broadest sense, the Industrial Hygiene Master's Program prepares students for professional practice, which means they will work toward the solution of a broad range of problems in a variety of settings. More specifically, this program is designed to develop knowledge and skills in the six key areas of Recognition, Evaluation, Control, Communication, Behavior and Management. For each of these key areas we expect students upon graduation to be able to:

Recognition

- R1. Anticipate and recognize occupational and environmental hazards (i.e., physical, chemical, and biological agents, factors, and stressors) generated by or associated with defined sources, unit operations, and/or work-related processes
- R2. Demonstrate an understanding of the relationship between exposures and health outcomes
- R3. Describe, interpret, and apply occupational and environmental regulations and guidelines
- R4. Include cultural and social factors in hazard recognition activities including training and hazard communication

Evaluation

- E1. Apply scientific principles to design methods for gathering and managing data, including using instrumentation and other methods to assess exposures to hazards and evaluate risks
- E2. Measure and evaluate health and safety programs

Control

- Con1. Design and implement work process interventions
- Con2. Recommend, evaluate and implement engineering, administrative, and personal protective controls and/or other interventions to reduce or eliminate hazards
- Con3. Validate the effectiveness of selected hazard control methods

Communication

- Com1. Communicate effectively and appropriately in both written, graphic, and oral media to advocate for continuous improvement in worker health and safety to pertinent audiences, including workforce, management, the public, and professional peers
- Com2. Design and deliver adult education programs
- Com3. Communicate effectively with other safety and health professionals

Behavior

- B1. Demonstrate awareness of diversity, equity and inclusion and the ability to work constructively in a diverse workforce and society
- B2. Practice professional duties in alignment with the professional codes of ethics
- B3. Explain and apply laws, regulations, and guidelines
- B4. Function effectively on an interdisciplinary team, contributing to an inclusive space for engaging in respectful conversation, debate, and collaboration
- B5. Engage in professional development activities

Management

- M1. Formulate and implement guidelines and policies
- M2. Manage resources efficiently and effectively to ensure they promote safe and healthy work and workplaces
- M3. Develop and implement health and safety programs to reduce workplace injuries, illnesses, and health disparities
- M4. Demonstrate the importance of business acumen for improving financial performance and leadership development