

## GIH Program Description

The GIH Program was designed to provide Air Force career professionals with relevant graduate education in the principles of industrial hygiene. This program was developed considering guidelines established by the Accreditation Board for Engineering and Technology and subject areas from the professional certification exam for the American Board of Industrial Hygiene. The GIH program complements the Environmental Engineering and Science degree and both programs share many core classes. Both programs were motivated by a request from the AF Bioenvironmental Engineering career field. The core curriculum includes course offerings in statistics, chemistry, risk assessment, industrial hygiene, industrial ventilation, radiation protection, chemical fate and transport in the environment, epidemiology, physiology, and toxicology.

## Program Educational Objectives (PEOs)

Ethical, technically-competent Environment, Safety, and Occupational Health professionals able to anticipate, recognize, evaluate, and recommend feasible control strategies for chemical, biological, and physical health hazards at Air Force, sister service, civilian, and foreign industrial and community environments.

## Program Outcomes (POs)

Graduating students should be able to:

1. **Anticipate/Recognize:** Identify agents, factors, and stressors generated by and/or associated with defined sources, unit operations, and/or processes; Describe qualitative and quantitative aspects of generation of agents, factors, and stressors; Understand physiological and/or toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and/or stressors with the human body
2. **Evaluate:** Assess qualitative and quantitative aspects of exposure assessment, dose-response, and risk characterization based on applicable pathways and modes of entry; Calculate, interpret, and apply statistical and epidemiological data; Interpret and apply applicable occupational and environmental regulations
3. **Control:** Recommend and evaluate engineering, administrative, and personal protective equipment controls and/or other interventions to reduce or eliminate hazards
4. **Manage:** Demonstrate an understanding of applicable business and managerial practices.

## School and Program Admissions Criteria

The general requirements for admission to the Master of Science program in Industrial Hygiene are:

**DEGREE REQUIRED:** A Bachelor's degree from an ABET accredited engineering program or a B.S. degree in a science related to environmental science, such as physics, biology, chemistry or industrial hygiene.

**MATHEMATICS REQUIRED:** Organic chemistry and biology courses are required. Note that some course requirements can be taken upon arrival at AFIT.

**OTHER COURSES REQUIRED:** Math courses including calculus through Ordinary Differential Equations.

**TEST REQUIRED:** GRE minimum combined score of 1100

**GPA REQUIRED:** OVERALL - 3.0; MATHEMATICS – 3.0; MAJOR – 3.0

Waivers to the above criteria may be granted on a case by case basis. Therefore, individuals whose academic credentials fall below any of the above criteria are encouraged to apply.

## **Industrial Hygiene (M.S.)**

### **Degree Requirements**

#### **Thesis**

12 hours

#### **Math Requirement**

8 hours

- [STAT 525 - Applied Statistics for Managers I](#)
- [STAT 535 - Applied Statistics for Managers II](#)

#### **Science Core Courses**

11 hours

- [ENVR 528 - Physiology and Toxicology](#)
- [ENVR 643 - Environmental Transport Processes](#)
- [ENVR 651 - Environmental Risk Analysis](#)

#### **Industrial Hygiene Core Courses**

17 hours

- [ENVR 541 - Industrial Hygiene I \(Anticipation/Recognition\)](#)
- [ENVR 543 - Industrial Hygiene II \(Evaluation\)](#)
- [ENVR 544 - Introduction to Epidemiology](#)
- [ENVR 547 - Ionizing and Non-ionizing Radiation](#)
- [ENVR 548 - Industrial Hygiene III \(Controls\)](#)