Occupational Safety and Health Engineering

The Occupational Safety and Health Engineering (OSHE) graduate certificate program provides a foundation in applying engineering principles to identify, assess, and control workplace hazards, ultimately preventing injuries, illnesses, and property damage. Students will develop skills in safety program development and implementation, risk assessment, the design of safe and healthy work environments, and regulatory compliance.

What will I learn?

Legal Aspects in Health and Safety that deals in the key laws and regulations pertaining to occupational health, safety, and product liability; methods to determine which codes apply in given situations and to prepare operating procedures to be used for internal compliance.

Safety Engineering Methods covering application of selected safety engineering methods to detect, correct, and prevent unsafe conditions and procedures. Methods selected are from safety management and programs; loss prevention; fire protection; systems safety; the design of buildings and other facilities; and the design of products, machinery, and equipment. Engineering problems in designing and constructing a hazard-free environment.

Industrial Hygiene and Occupational Health covering recognition, evaluation and control of human exposure to noise, heat, bio-hazards, chemicals, radiation, and improper lighting. Government standards, field measurements, work practices, engineering designs, and the effects of excessive exposure on worker health and productivity.

Applied Industrial Ergonomics that focuses on optimizing the design of equipment, tools, workplaces, and jobs to improve human performance, safety, and well-being in industrial settings. This course is beneficial for engineers, safety professionals, and health practitioners seeking to understand human-centered design principles and current challenges in industrial ergonomics. Students will gain hands-on experience with a variety of evaluation methods and analytical tools used to assess and enhance system performance, reduce injury risk, and improve productivity through effective ergonomic interventions.

Additionally, you will be able to choose from elective courses that covers Systems Safety, Advanced Engineering Statistics, Managing Organizational Behavior in Technology-Based Organizations, Quantitative Environmental Risk Assessment, Toxicology, and Environmental Health

Prerequisites

Eligibility for admission requires completion of an undergraduate degree in engineering, the sciences or a closely related area. Students who lack an appropriate background may be admitted and required to make up deficiencies by taking a program of courses designed in consultation with graduate advisors.

Related Degree Programs

Credits from this certificate will entirely be applicable to an MS in Occupational Safety and Health Engineering (https://mie.njit.edu/ms-occupational-safety-and-health-engineering/).

Who is suited for this program?

This certificate program is intended for individuals seeking to enter or working in the occupational safety and health field, which currently enjoys high growth rate and demand. Examples of the job titles are Ergonomist, Environmental Health and Safety Specialist, Environmental Health and Safety Manager, Regulatory Affairs Manager, and Technical Program Manager.

The Occupational Safety and Health Engineering (OSHE) Graduate Certificate consists of twelve (12) Credits:

Code	Title	Credits
REQUIRED COURSES Select at least three (3) courses out of this group:		
EM 633	Legal Aspects of Health and Safety	3
IE 614	Safety Engineering Methods	3
IE 615	Industrial Hygiene and Occupational Health	3
IE 665	Applied Industrial Ergonomics	3
SELECT one (1) course from this group, if needed:		
IE 685	Systems Safety	3
IE 604	Advanced Engineering Statistics	3
HRM 601	Managing Organizational Behavior in Technology-Based Organizations	3
EVSC 614	Quantitative Environmental Risk Assessment	3
EVSC 616	Toxicology	3
EVSC 623	Environmental Health	3