

SENG 310/680—INDUSTRIAL HYGIENE ENGINEERING

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Textbook: Ronald Scott, *Basic Concept of Industrial Hygiene*
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Description: Application of scientific and engineering principles in the selection and design of control systems related to chemical, physical and ergonomic exposures in the process and manufacturing industries; relationships of criteria, analysis and specifications for the assessment and control of occupational related illnesses.

Topics:

- Introduction to Industrial Hygiene
- Federal Regulations
- Hazard Communication
- Basics of Toxicology: Toxic Effects
- Basics of Toxicology: Measuring Toxicity
- Basics of Toxicology: Toxicokinetics
- Dermatitis and Eye Hazards
- Inhalation Toxicology
- Monitoring Atmosphere
- Clean Air
- Fire and Explosion
- Protection from Chemicals in special situation
- Hearing Loss
- Radiation
- Working in Extreme Temperature
- Prevention of Accident
- Cumulative Trauma
- Bio-Hazards
- Application in Selected Industries

Objectives:

- To introduce the industrial hygiene engineering field from a historical standpoint and to describe the legal basis of health and safety in the U.S.
- To focus on chemical hazards (the problems that arise from skin contact/inhalation of chemicals, the detection and control of airborne contaminants, and the threat of fire or explosion are discussed)
- To discuss injuries as a result of sound, radiation, heat, biological agents, and accidents, and to introduce ergonomics
- To introduce important industries and application of safety principles.