



THE UNIVERSITY OF ARIZONA

Mel & Enid Zuckerman College of Public Health

Mel and Enid Zuckerman College of Public Health University of Arizona

EHS 553 Toxicology and Chemical Exposure

Catalog Description: Principles of toxicology related to industry and the environment; dose response; mechanisms of toxicity; hazard evaluation principles; toxicology of major classes of industrial and environmental compounds. (3 units)

Course Topics:

- Hazard Evaluation
- Toxicology
- Asphyxiants, Acids & Bases
- Poison Control Centers
- Respirator Fit-testing
- Hydrocarbons
- Carcinogenesis and Teratogenesis
- Pesticides
- Firefighting Hazards

Course Objectives: During this course, students will:

- Utilize various information sources to identify chemicals commonly employed in industry.
- Appreciate the potential toxic effects of various families of chemical agents.
- Understand the basic mechanisms of toxicity of selected chemical agents relative to exposure level.
- Appreciate the significance of exposure levels relative to currently acceptable exposure limits.
- Describe common chemical exposures by specific industry and environment.

Learning Outcomes (Competencies Obtained): Upon completion of this course students will be able to:

1. Recognize and classify the major types of chemical exposure agents capable of inducing disease in the public
2. Describe the base mechanism of toxicity and potential health effects and diseases caused by various chemical agents
3. Anticipate and recognize stressors, know toxic effects, correctly apply legal standards to the workplace, and recognize the need for life-long learning
4. Identify control methods for reducing worker or public exposures to acceptable levels
5. Understand physiological and/or toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and/or stressors with the human body
6. Assess qualitative and quantitative aspects of exposure assessment, dose-response, and risk characterization based on applicable pathways and modes of entry