

Chemical Laboratory Safety and Risk Management

(A Short course of the Chemistry Subject Board)

This short course (based on ACS Safety Programs) offers education on chemical safety concepts to recognize hazards, assess the risks, minimize and manage the risks, and prepare for emergencies. This course will introduce various safety concepts necessary to develop a strong culture of safety while working in chemistry laboratories. Students will learn i) Safety concepts to work safely in the chemistry laboratory; ii) Use of safety protocols for safe laboratory practices; iii) Methods to minimize hazards and risks in the laboratory and iii) Steps to be taken in case of laboratory accident and emergencies.

1. From Rules to Risk

- 1.1. Understanding Hazard and Risk
- 1.2. Concepts of RAMP: Recognize the hazards, Assess the risks, Minimize the risks, Prepare for emergencies

2. OSHA and EPA Regulations for Laboratories

- 2.1. Globally Harmonized System of Classification and Labeling of Chemicals (GHS)
- 2.2. Safety Data Sheets (SDS or MSDS)

3. Recognizing and Communicating Hazards

- 3.1. Types of Chemical Hazards (Flammability, Corrosivity, Reactivity, Physical and Biological Hazards)
- 3.2. Overview of Toxicological Principles
- 3.3. Routes of Exposure
- 3.4. Recognizing Exposure
- 3.5. Minimizing Exposure

4. Standard Operating Procedures (SOP)

- 4.1. Benefits of Using SOPs
- 4.2. Best Practices for Laboratories

5. Assessing and Minimizing Risk

- 5.1. Hazard and Risk Assessments
- 5.2. Minimizing Risk (Chemical Storage, Hazardous waste)
- 5.3. Elimination, Administrative, & Engineering Controls
- 5.4. Personal Protective Equipment
- 5.5. Preparing for and Responding to Emergencies

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Days: Mon, Tue, Wed, Thu, Fri

Venue: AG80

Course start date: 6th June 2022 (1.5h x 10 lectures)

Hours: 5.30 to 7.00 pm