

# UNITED SAFETY SOLUTIONS

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826 Bloom Rd  
Eagle River, WI 54521

## LABORATORY SAFETY

OSHA Laboratory Safety  
Course: Hours Instruction  
Hours: Class Room  
Hours: Field Instruction

Regulation 29 CFR 1910.1450  
Prerequisites:  
Fee:  
CE Credits:

More than 500,000 workers are employed in laboratories in the U.S which may be a hazardous place to work, exposing laboratory workers to numerous potential hazards including chemical, biological, physical and radioactive hazards, as well as musculoskeletal stresses.

Hazardous chemicals present physical and/or health threats to workers in clinical, industrial, and academic laboratories, including *chemicals* (cancer-causing agents / carcinogens), *toxins* (affecting the liver, kidney, or nervous system), *irritants, corrosives, and sensitizers*, as well as agents that act on the blood system or damage the lungs, skin, eyes, or mucous membranes. OSHA rules limit all industry exposures to approximately 400 substances.

Laboratory safety is governed by numerous local, state and federal regulations. Over the years, OSHA has promulgated rules and published guidance to make laboratories increasingly safe for personnel. The Occupational Exposure to Hazardous Chemicals in Laboratories standard 29 CFR 1910.1450 was created specifically for non-production laboratories. This standard covers laboratories where chemical manipulation generally involves small amounts of a limited variety of chemicals and applies to all hazardous chemicals meeting the definition of "laboratory use" and having the potential for worker exposure.

Additional OSHA standards provide rules that protect workers in laboratories from chemical hazards as well as biological, physical and safety hazards.

**Who Should Take This Course:** Laboratory workers who are exposed to potential hazards including chemical, biological, physical and radioactive hazards, as well as musculoskeletal stresses.

### Laboratory Safety - BIOHAZARDS, Part 1

#### Understanding Risk:

- Students will learn how exposure to potentially infectious materials may occur in the workplace.
- Students will learn common classification systems used with potentially infectious biological materials and biosafety levels that describe containment standards for these materials.
- Students will learn high-level information regarding steps used to assess and manage risks associated with potentially infectious biological materials.



## Learning Objectives:

- Recognize the standards and guidelines that apply to workers in microbiological and biomedical laboratories
- Identify the routes of exposure for laboratory-associated infections
- Identify the hazardous characteristics of an agent and the type of agents in each risk group classification and criteria for each level of biosafety
- Recognize required practices, principles, safety and primary/secondary barriers of the four biosafety levels
- Describe types of occupational health services required in microbiological and biomedical laboratories

## Laboratory Safety - BIOHAZARDS, Part 2

### Controlling Risk:

- This course provides an in-depth look at the components of the risk management process used to determine appropriate biosafety levels for clinical and research laboratories.
- This course describes the duties of the laboratory director, as well as pertinent regulations regarding transportation and importation of agents and vectors capable of causing human disease.
- This course also provides the definition and purpose of laboratory biosecurity and associated components as well as an overview of facility and biosafety level requirements for research laboratories dealing with infectious disease activities using live animals.

### Learning Objectives:

- Identify components of risk assessment and management
- Identify methods to control risks
- Describe laboratory director responsibilities in relation to clinical laboratories and each BSL
- List regulating bodies that affect importation and interstate shipment of biomedical materials
- Describe laboratory biosecurity and its components
- List components of biosafety for animal facilities

## Laboratory Safety - CLEANROOMS

Cleanrooms are extremely challenging work environments where operations must be performed with precision and efficiency. Cleanroom conditions must be maintained at all times, with levels of contaminants carefully controlled. Successful cleanrooms rely on the knowledge, professionalism, and responsibility of all personnel. This course prepares trainees to become a part of the community of cleanroom workers and do their part to ensure safe operations, through knowledge ensuring laboratory cleanroom workers know how to maintain the cleanroom they're working in to function in a safe and efficient manner.

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## **The international standard for cleanrooms ISO 14644 covers:**

- Air cleanliness
- Cleanroom classification
- Air testing methods
- Design and construction
- Start-up operations
- Vocabulary
- Classification of contaminants

## **Learning Objectives:**

- The essential environment and nature of cleanrooms
- General cleanroom practices and procedures
- Rules of conduct in a cleanroom
- The definition of cleanrooms
- How cleanrooms are classified and some of their design features
- The use and benefit of control measures to prevent contamination, ranging from wearing protective clothing to practicing good housekeeping
- Practice the principles of laboratory safety in cleanroom environments

## **United Safety Solutions Course Covers:**

- Understanding and Controlling risk in a Biohazard laboratory environment
- Laboratory safety measures to ensure a Cleanroom is free of contamination, ranging from wearing protective clothing to practicing good housekeeping
- Principles of laboratory safety in cleanroom environments

## **Certification:**

Successful completion requires 80% on both classroom and practical skills.

Upon successful completion, participants receive a wallet card, documentation to satisfy OSHA.

Syllabus - LABORATORY SAFETY - 11/7/2015