List Price: $1,649.00
Level: Intermediate
Length: 5 Days

Early bird discount:
$150 off if paid 30 days prior to the training.

Attendees are eligible for:
3.6 ABIH CM Credits, 40 AAHP CE Credits,
2.25 COC Points and 5 BLS CM Points

This five-day course is designed for those persons designated as the Laser Safety Officer (LSO) for their facility who also need a solid introduction to lasers.

The first day of the course provides a general overview of types of lasers and how laser light differs from that produced by the sun and other “ordinary” light sources. The participant also learns about laser operation, terminology and beam properties. Common types of lasers including specific gas, solid-state, and diode lasers are discussed and an overview of laser optics and beam delivery systems is included. The discussion of basic laser operation emphasizes those laser characteristics that are important for the LSO to understand in order to perform the laser hazard evaluation.

The next four days of the course consist of an in-depth, analytical presentation of the LSO’s duties and requirements according to ANSI Z136.1, OSHA, FDA-CDRH and state laser standards. After a review of the biological basis, the student will complete an in-depth computational workshop that covers MPEs, AELs, NHZs and ODs. An in-depth discussion of the control of laser hazards is provided.

Options for on-site training programs are presented including video examples and interactive video/computer programming. The course concludes with a session on non-beam hazards associated with laser use (e.g., fumes, shock, and plume) with emphasis on industrial hygiene-based solutions.

Course Topics:
Introduction
- Basic laser concepts
- Differences between laser light and ordinary light
- Types of electromagnetic radiation
- Spontaneous and stimulated emission of radiation

Types of lasers
- Components common to all laser types
- Discussion of gas, solid state, diode and liquid dye lasers

Laser output characteristics
- Radiometric terms and units for lasers
- Continuous wave, single and repetitively pulsed outputs

Laser optics, components, and beam delivery systems

LSO’s duties and responsibilities according to the ANSI Z136 standard

Biological effects of laser radiation on the eye and skin

Determination of MPEs, with computational examples
- Calculation of Nominal Hazard Zones (NHZs)
- Wavelength and time correction factors
- Details of the laser hazard classes
- Accessible Emission Limits (AELs)

Laser accident review and case studies

Laser safety control measures
- Safety requirements within the laser controlled area (LCA)
- Training requirements for laser operators
- Laser eyewear selection

Laser safety program management in industry, research, and education

Non-beam hazards and their controls