

# **Advanced Laser Safety**

#### Description

This 3-day advanced course is for experienced Laser Safety Officers, scientists, engineers, and safety professionals who desire in-depth, expert knowledge of laser hazard analysis, the application of the ANSI Standard in complex research situations, and the latest issues and solutions in laser safety for research. This is not a review course. Only those already proficient in the basics of laser safety, basic laser hazard analysis calculations, and the application of the ANSI Z136.1 "Safe Use of Lasers" Standard in usual laser situations should attend. If you have not completed at least a 3-day Administrative Laser Safety Officer course, you are probably not prepared for this course. A scientific calculator is required and a laptop computer is strongly suggested.

#### **Course Fee**

\$995 -3-day Advanced Laser Safety

#### **Course Materials**

Advanced Laser Safety Course Notes
OSHA Technical Manual on Laser Safety Programs
EASY HAZ™ LSO Hazard Analysis Software
USB Thumb Drive with Laser Safety Documentation & Resources
Certificate of Completion

### Advanced Laser Safety Course Topics - Day 1 - 9am-5pm

- Review of Laser Output Characteristics
- Review of Laser Hazard Analysis Calculations
- Basic Laser Hazard Calculations using EASY HAZ™ Advanced LSO laser hazard analysis software.
- Review of ANSI Z136.1 2014 with emphasis on Section 4 (Control Measures)
- Examination of ANSI Z136.8, American National Standard for Safe Use of Lasers in Research,
   Development, or Testing
- Recent Advances in Laser Technology
- Safe Alignment of Research Laser Systems

## Advanced Laser Safety Course Topics - Day 2 - 9am-5pm

- Laser Safety Audits of Research Labs
- Beam Control in Research Labs
- Selecting Control Measures in Unusual Situations
- Laser Hazard Analysis for Research Labs (Example Problems)
- Laser Accidents and Lessons Learned
- Laser Safety Policies in Research Organizations
- Student Exercise in Hazard Analysis Using EASY HAZ™ LSO



## Advanced Laser Safety Course Topics - Day 3 - 9am-5pm

- Advanced Laser Hazard Analysis
- Extended Sources
- Radiance
- Laser Measurements for Classification
- IEC60825 International Standard
- Laser Safety Eyewear for Ultrashort Pulses, Multiple Wavelengths, and Alignment
- Laser SOPs and Alignment Procedures
- More Challenging Laser Hazard Analysis Using EASY HAZ™ LSO
- Outdoor Laser Hazard Calculations
- Examples of Extended Source Hazard Calculations Using EASY HAZ™ LSO
- Managing the Personal Database in EASY HAZ™ LSO
- Laser Hazard Analysis of Student Systems and Situations