

IASHEP Certified Machine Guarding Specialist – Advanced

Course Credential: CMGS

Course Duration: 4 days

Course Fees: \$2795.00 IASHEP Member Fee: \$1895.00

CEU's: 4.00

Continuing Education Credit

Four (4.0) CEUs (note this will change based on the number of hours per course) are offered for this course. As an IACET Accredited Provider, IASHEP offers IACET CEUs for its learning events that comply with the ANSI/IACET Continuing Education and Training Standard. CEUs will be reflected on the certificate upon completion of the course and examination. Partial credit or adjusted CEUs will not be awarded for individuals who do not successfully meet the IACET requirements for issuing CEUs

Course Objectives:

Day 1: Introduction to OSHA Machine Guarding and Risk Assessment

Module 1: Introduction to OSHA Machine Guarding Requirements

- Overview of OSHA regulations for machine guarding
- Key elements of OSHA 1910 Subpart O Machinery and Machine Guarding
- Understanding OSHA citations and violations related to machine guarding
- Conducting risk assessments using ANSI TR3
- Measuring safe opening distances to prevent risk

Module 2: Types of Machine Safeguards and Applications

- Fixed, interlocked, adjustable, and self-adjusting guards
- Determining appropriate safeguard types based on machine type
- Importance of safeguarding the power transmission apparatus and other moving parts at the point of operation

Module 3: Designing and Installing Machine Guards

- Best practices for machine guard design and installation
- Material selection for guards based on specific applications
- Case studies highlighting effective machine-guarding implementations

Day 2: Specific Machine Guarding Techniques

Module 1: Guarding Milling Drilling & Boring Machines

 Hazards associated with milling drilling & boring machines and, especially, coolant hazards that affect the safety of Lexan and its fasteners.

Note - Other inspectors, including OSHA inspectors always overlook

this hazard.

• Proper placement and design of guards for effective hazard reduction

Belt and Disk Sanders

- Hazards associated with a belt, disk sanders, and spindle sanders and why OSHA does not cite them.
- Proper placement and design of guards for effective hazard reduction

Module 2: Guarding Metalworking Machines

- Safety requirements for mechanical power presses (ANSI B11.2)
- Hydraulic and pneumatic press safety (ANSI B11.3)
- Power press brake safety (ANSI B11.4)
- Overview of additional safety standards by NFPA, RIA, ASME, and MIL

Module 3: Guarding Hydraulic Punch Presses

- Risks and safety requirements for hydraulic punch presses
- Designing guards for high-pressure machinery

Module 4: Advanced Machine Guarding Standards

- ANSI standards for various equipment types (e.g., conveyors, lasers, ladders)
- ISO international safety standards for machinery and electromagnetic compatibility
- OSHA standards related to machine safety and general industry (29 CFR 1910)

Day 3: Advanced Machine Guarding Applications

Module 1: Guarding Horizontal and Vertical Bandsaws

- Techniques for safeguarding bandsaws in different orientations
- Maintaining functionality while ensuring operator safety

Module 2: Guarding Spot Welders

- Spot welding hazards and specific safety requirements
- Guard placement and safety device integration for spot welders

Module 3: Building and Installing Machine Guards

- Practical guide to fabricating machine guards
- Real-world examples of custom guard applications

Day 4: Lockout/Tagout, Electrical Safety, and ANSI/ISO Standards

Module 1: Lockout/Tagout (LOTO) for Machinery

- Overview of OSHA Lockout/Tagout Standard (1910.147)
- Preventing accidental startup during maintenance through best practices

Module 2: Electrical Safety Requirements (NFPA 79)

- Key electrical safety requirements for industrial machinery
- Control circuits, emergency stop functions, and NFPA standards

Module 3: Introduction to ANSI and ISO Standards for Machine Guarding

• ANSI B11 standards for machinery safety

• ISO/TS 15066:2016 for robotic systems and collaborative robots

Module 4: Gate Types and Machine-Specific Standards

- Risk assessment and reduction (ANSI B11.TR3)
- Design and application of Type A & B gates
- Machinery-specific guarding requirements and practical case studies

Conclusion and Certification

- Recap of key course content
- Q&A session to address real-world challenges
- Final exam to assess understanding and application of machine guarding principles
- Issuance of Certified Machine Guarding Specialist certification upon successful completion

Note: This is not an OSHA or an OSHA Training Institute Education Center (OTIEC) Level Training program.

Course Prerequisite: Students must complete the IASHEP Certified Machine Guarding Specialist (CMGS) course or equivalent training from an OSHA Training Institute. *Trainers* at least once every three (3) years to maintain their trainer status.

Audience:

• Government Compliance Officers

- OSHA VPPPA Participants
- Technical Education Instructors
- Building Contractors Equipment Installers
- Maintenance Workers
- Training Managers
- Industrial Hygienists

Prerequisites:

Education:

Bachelor's degree in engineering, chemistry or physics OR a bachelor's degree in a closely related biological or physical science from an accredited college or university. Three (3) years of acceptable work experience may be substituted for each year of an academic degree program (i.e. Twelve years of experience is equivalent to a bachelor's degree).

Work Experience:

Three (3) years of experience where at least 30% of your work is directly related to working in safety, industrial hygiene, or the environment is performed in this field. Education cannot be substituted for work experience. Please note: This requirement is in addition to the expertise used instead of education.

Other Experience:

Documented GED / Apprentice Certificate Completion / On-The-Job / Skills Training / or AA / BSc / BA in safety management or similar field. Certificates in occupational health and safety from OSHA or an authorized OSHA Training Institute Education Center (OTIEC), NEBOSH, National Safety Institute, Military Specialty Ratings (ARMY, NAVY, Marines, Coast Guard, Air Force, Space Force, & Reserves, National Guard, or similar training organizations from other countries will be considered.

Recertification:

A refresher examination is required every three (3) years to maintain certification.

It's crucial to understand that this course is not just any course. It's aligned with the highest industry standards. As an IACET Accredited Provider, IASHEP offers Continuing Education Units (CEUs) for its learning events that comply with the ANSI/IACET Continuing Education and Training Standards.

The International Accreditors approve IASHEP for Continuing Education & Training (IACET). The International Accreditors for Continuing Education and Training (IACET) is the developer of the original Continuing Education Unit (CEU) and today ensures that providers of continuing education and training can prove they provide high-quality instruction by following the ANSI/IACET 1-2018 Standard for Continuing Education and Training through a rigorous accreditation process.

For more information or to register for this course, please visit www.iashep.org and complete the course enrollment form. If you have any questions, please contact the IASHEP Training Administrator at (612 - 801-1032).

