Guidance on Safety and Health Management System (SHMS)

Best practices from OSHA's [Recommended Practices for Safety and Health Programs](#) *Core Elements of the Safety and Health Program Recommended Practices; Pg. 7;* **Adapted for use by Secondary and Postsecondary Career and Technical Education (CTE) Programs**

Note: Theses Core Elements have been revised from OSHA's *Core Elements of the Safety and Health Program Recommended Practices*, to focus on student learning and function within an authentic CTE program Safety and Health Management System (SHMS). It includes essential leadership, faculty, staff, employer, and stakeholder roles and program operations.

Purpose: OSHA states that establishing a safety and health system is one of the most effective ways of protecting workers from injury, or worse. CTE programs that train students for careers strive to provide teaching and learning in an authentic industry environment. These best practices can assist CTE programs in their efforts to prepare students to have those career-ready skills, knowledge, and practices.

MANAGEMENT LEADERSHIP

Includes Administrators, Faculty, and Employers

Resources:
https://www.osha.gov/shpguidelines/docs/OSHA_SHP_Recommended_Practices.pdf

- Administration demonstrates its commitment to eliminating hazards and to continuously improving workplace safety and health, communicates that commitment to workers, and sets program expectations and responsibilities.
- The institution has a plan and system in place for employees/students/stakeholders to report hazards, close calls/near misses, injuries, illnesses and other safety and health concerns. The plan and system includes investigation, recordkeeping and reporting back to employees/students/stakeholders on what action was taken in response to the safety-related reports. The institution also observes OSHA Injury and Illness Recordkeeping and Reporting Requirements.
- Administration at all levels make safety and health a core organizational value, establish safety and health goals and objectives, provide adequate resources and support for the program, and set a good example.
- Efforts, activities, and policies, include the following:
  - ✓ Creating a positive health and safety culture; understanding legalities and responsibilities; ensuring reputation; supporting, planning, and resourcing; rewarding; assessing and monitoring.
  - ✓ Ensuring that administrators, faculty, staff, and students understand that it's their right to expect to perform all functions within a safe and healthy environment.
  - ✓ Administration implements safety as an accountability component within leadership, faculty, and staff annual performance reviews.
  - ✓ Administration requires that employee professional development plans identify safety knowledge, skills, and abilities needed by the individual, and provides support and resources so employees accomplish those identified goals.
  - ✓ Programs develop a S&H Plan. (Ref https://www.osha.gov/shpguidelines/docs/OSHA_SHP_Recommended_Practices.pdf).
  - ✓ Draft S&H Plan is reviewed by Program Advisory Committee, submitted to Administration for review and approval, then receives final approval by the Program Advisory Committee.
  - ✓ A hazard identification and analysis system is recognized as being foundational to a safe and healthy environment, and is implemented to identify basic and unforeseen safety and health hazards, evaluate risks, and prioritize methods to eliminate or control hazards. Leadership requires the program to conduct routine hazard assessments, utilizing processes described in OSHA's Job Hazard Analysis publication at: https://www.osha.gov/Publications/osha3071.pdf, and utilizing resources from the NIOSH's Hierarchy of Controls at: https://www.cdc.gov/niosh/topics/hierarchy/, Safety Checklist Program for Schools at: https://www.cdc.gov/niosh/docs/2004-101/, and other sources.
  - ✓ Employers and sites for internships and other Work-based Learning experiences are inspected and approved as safe for students.
  - ✓ Administrators and faculty provide positive communications to all employees and students.
  - ✓ Implementation of the program follows a research-based successful implementation strategy. Leadership support from positive formal and informal leaders (management, instructors, students, and stakeholders) will be recruited as leaders throughout implementation and operations efforts.
  - ✓ Annual S&H program review and improvement is conducted, using the OSHA's Safety and Health Program Audit Tool, at: https://www.osha.gov/shpguidelines/docs/SHP_Audit_Tool.pdf
  - ✓ Program leadership works with its Program Advisory Committee to identify a Safety Advisory subgroup of workers, including students participating in work-based learning (WBL); workers supervising students in WBL; and incumbent workers – to identify and address authentic worker-related safety issues. This subgroup serves as a subcommittee of the Program Advisory Committee, to review and make recommendations on program safety, content, and student attainment of skills, knowledge, and abilities to work safely in the industry.
  - ✓ Annual strategic plan is developed from the results of the S&H Program Audit.
  - ✓ Program leadership contacts their state OSHA Consultation Service for assistance with unresolved questions regarding identifying potential hazards, OSHA standards and compliance, for educational assistance, and for reviewing safety and health plans (Ref: https://www.osha.gov/dcsp/smallbusiness/consult_directory.html).

WORKER PARTICIPATION

Includes Administrators, Faculty, Staff, and Students

Resources:
https://www.osha.gov/shpguidelines/worker-participation.html

- Workers and their representatives are involved in all aspects of the program—including setting goals, identifying and reporting hazards, investigating incidents, and tracking progress.
- All workers, including contractors and temporary workers, understand their roles and responsibilities under the program and what they need to do to effectively carry them out.
- Workers are encouraged and have means to communicate openly with management and to report safety and health concerns or suggest improvements, without fear of retaliation.
- Workers report all work-related injuries, illnesses, or "near miss" events (which could have caused an injury or illness) through the established institutional reporting system, on an Accident Investigation Form https://www.osha.gov/dte/grant_materials/fy11/sh-22224-11/3_Accident_Investigation_Form.pdf
- Any potential barriers or obstacles to worker participation in the program (for example, language, lack of information, or disincentives) are removed or addressed.
- Includes the following:
  - ✓ Leadership, faculty, staff, students, and workplace supervisors of students engage in required safety and health education and training.
  - ✓ Students keep a weekly job log (for program lab work and work-based learning) that includes identifying challenges and potential safety hazards and describing what they (students) did to meet the challenges and mitigate hazards.
  - ✓ Students regularly complete job hazard analysis process analyses, according to OSHA regulations, following OSHA's Job Hazard Analysis publication at: https://www.osha.gov/Publications/osha3071.pdf.
  - ✓ Employees and students report safety issues and concerns through a well-established, structured process that results in review and resolution of reported issues.

HAZARD IDENTIFICATION AND ASSESSMENT

Includes Administrators, Faculty, Staff, and Students

Resources:
https://www.osha.gov/shpguidelines/hazard-Identification.html

- Procedures are put in place to continually identify workplace hazards and evaluate risks.
- Safety and health hazards from routine, nonroutine, and emergency situations are identified and assessed.
- An initial assessment of existing hazards, exposures, and control measures is followed by periodic inspections and reassessments, to identify new hazards.
- Any incidents are investigated with the goal of identifying the root causes.
- Identified hazards are prioritized for control.
- Includes the following:
  - ✓ Instructors assemble a safety inspection program utilizing resources from the NIOSH Safety Checklist Program for Schools. Instructors involve students in regularly inspecting program facility and operations.
  - ✓ Safety Advisory subgroup of workers, including students participating in work-based learning (WBL); workers supervising students in WBL; incumbent workers identified by advisory committee members, reviews reports and data to identify and address authentic worker-related safety issues.
  - ✓ The hazard identification and analysis system is recognized as being foundational to a safe and healthy environment, and is implemented to identify basic and unforeseen safety and health hazards, evaluate risks, and prioritize methods to eliminate or control hazards. Students learn and utilize the job hazard analysis process to identify potential safety hazards and mitigate them by utilizing OSHA's Hazard Identification Training Tool to engage students in training and exercises (Ref: https://www.osha.gov/hazfinder/index.html), and other resources.
  - ✓ Students conduct routine hazard assessments, utilizing processes described in OSHA's Job Hazard Analysis publication at: https://www.osha.gov/Publications/osha3071.pdf. JHA's are reviewed and discussed throughout the teaching and learning process.
  - ✓ Near misses are investigated in the same manner and process used to investigate accidents.
  - ✓ Program leadership contacts their state OSHA Consultation Service for assistance with unresolved questions regarding identifying potential hazards, OSHA standards and compliance, for educational assistance, and for reviewing safety and health plans (Ref: https://www.osha.gov/dcsp/smallbusiness/consult_directory.html).

HAZARD PREVENTION AND CONTROL

Includes Administrators, Faculty, and Employers

Resources:
https://www.osha.gov/shpguidelines/hazard-prevention.html

- Employers and workers cooperate to identify and select methods for eliminating, preventing, or controlling workplace hazards. OSHA's recommended practice for hazard identification, assessment, and control is utilized to predict and mitigate potential safety hazards. Ref: https://www.osha.gov/shpguidelines/hazard-Identification.html
- Controls are selected according to a hierarchy that uses engineering solutions first, followed by safe work practices, administrative controls, and finally personal protective equipment (PPE).
- A plan is developed that ensures controls are implemented, interim protection is provided, progress is tracked, and the effectiveness of controls is verified.
- Includes the following:
  - ✓ Students demonstrate knowledge, skills, and abilities to predict potential hazards, use risk assessment processes, and hierarchy of hazard control to implement protections and control measures.
  - ✓ Students utilize resources from the NIOSH's Hierarchy of Controls at: https://www.cdc.gov/niosh/topics/hierarchy/ to establish appropriate mitigation of hazards.
  - ✓ Students utilize training tools, such as OSHA's Hazard Identification Training Tool, in order to learn how to identify hazards – Ref: https://www.osha.gov/hazfinder/index.html.
  - ✓ Students learn about and utilize the NFPA 70E standards - requirements for safe work practices to protect personnel by reducing exposure to major electrical hazards, originally developed at OSHA's request, and free availability is at: https://www.nfpa.org/Login. Students are taught the lockout-tagout process in order to de-energize live and stored energy in electrical, mechanical, hydraulic, pneumatic, chemical, thermal, and other sources. Program utilize resources, such as OSHA's Lockout-Tagout Interactive Training Program (Ref: https://www.osha.gov/dts/osta/lototraining/index.html).
  - ✓ Employers that provide work-based learning placements and supervision of students have a S&H Plan in place containing the Core Elements identified by OSHA in its *Core Elements of the Safety and Health Program Recommended Practices.*
  - ✓ Student lab activities, work-based learning reports, and student job logs are regularly reviewed to ensure that hazards controls are in place, and potential safety concerns are being appropriately addressed.
  - ✓ Employees/students/stakeholders report safety issues and concerns through a well-established, structured process that results in review and resolution of reported issues.
  - ✓ Program leadership contacts their state OSHA Consultation Service for assistance with unresolved questions regarding identifying potential hazards, OSHA standards and compliance, for educational assistance, and for reviewing safety and health plans (Ref: https://www.osha.gov/dcsp/smallbusiness/consult_directory.html).

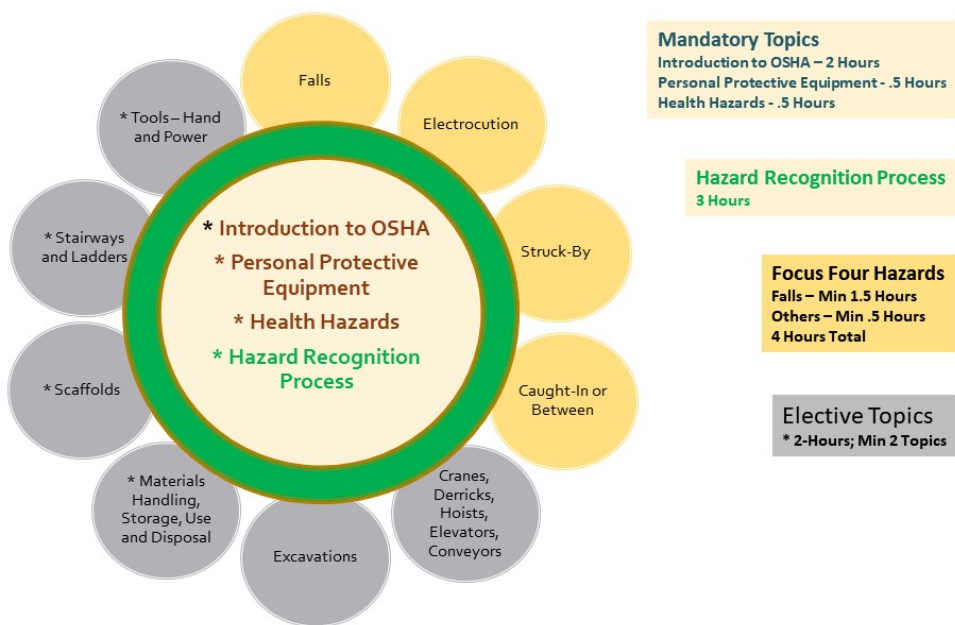| **EDUCATION AND TRAINING**

Includes Administrators, Faculty, and Employers

Resources:
https://www.osha.gov/shpguidelines/education-training.html | • All workers are trained to understand how the program works and how to carry out the responsibilities assigned to them under the program.
• Employers, managers, and supervisors receive training on safety concepts and their responsibility for protecting workers' rights and responding to workers' reports and concerns.
• All workers are trained to recognize workplace hazards and to understand the control measures that have been implemented.
• Includes the following:
  ✓ All students complete the OSHA 10-hour outreach training. 15-hour expanded OSHA 10-Hour Safety Training, Ref: *Operationalizing the OSHA 10-Hour Safety Outreach Training 15 Hours* concepts operationalize 10-hour training topics into CTE education/training, where applicable. (Ref: bottom of page)
  ✓ All instructors and on-site work-based learning supervisory personnel will complete the 30-hour OSHA Safety Training.
  ✓ Education and Training is informed by OSHA's Recommended Practices for Safety and Health Programs – Crosswalk to Existing Standards at: https://www.osha.gov/shpguidelines/docs/SHPs_and_Existing_OSHA_Standards_factsheet.pdf
  ✓ Instructors utilize the NIOSH Safety Checklist Program for Schools at: https://www.cdc.gov/niosh/docs/2004-101/ to teach students about how to understand safety regulations, perform safety inspections and maintenance, and comply with safety and health and environmental regulations.
  ✓ Students utilize training tools, such as OSHA's Hazard Identification Training Tool, in order to learn how to identify hazards – Ref: https://www.osha.gov/hazfinder/index.html.
  ✓ Training is provided, as required by specific OSHA standards (ref: *Training Requirements in OSHA Standards*; https://www.osha.gov/Publications/osha2254.pdf
  ✓ Safety training is identified and provided, as needed as part of each student's Professional Development plan. Specific additional third-part safety training may be required. Examples include: Job Safety & Environmental Analysis (delivered with the OSHA 10-hour); Arc Flash; Rigging, Lifting and Cribbing; Adult First Aid w/CPR; Forklift; Electrostatic Discharge; Fall Protection (including Nacelle Rescue, Top of the Nacelle Rescue, Hub Rescue, Ladder Climb, Ladder Rescue, and Tower Self Rescue). Students will develop the understanding, knowledge, skills, and abilities to function within a Safety and Health plan framework by graduation. |
| **PROGRAM EVALUATION AND IMPROVEMENT**

Includes Administrators, Faculty, and Employers

Resources:
https://www.osha.gov/shpguidelines/program-evaluation.html | • Control measures are periodically evaluated for effectiveness.
• Processes are established to monitor program performance, verify program implementation, and identify program shortcomings and opportunities for improvement.
• Necessary actions are taken to improve the program and overall safety and health performance.
• Includes the following:
  ✓ Safety becomes formalized within the annual program review and improvement process.
  ✓ Faculty complete an annual safety audit using the revised *Safety and Health Program Audit Tool*.
  ✓ Safety Advisory subgroup annually reviews safety audit, accident and near-miss reports, and reported safety issues, and makes recommendations for updating the program's strategic plan for the coming year.
  ✓ Program Advisory Committee considers Safety Advisory subgroup recommendations as it updates the program's annual strategic plan.
  ✓ Program review and improvement is conducted according to guidelines set forth by The Higher Learning Commission of the North Central Association of Colleges and Schools
  ✓ Administration reviews and, subject to any discussions/adjustments, signs off on the program's strategic plan.
  ✓ Advisory Committee receives routine updates on program improvement progress to strategic planning goals and objectives throughout the year at its regular meetings.
  ✓ Program leadership contacts their state OSHA Consultation Service for assistance with unresolved questions regarding identifying potential hazards, OSHA standards and compliance, for educational assistance, and for reviewing safety and health plans (Ref: https://www.osha.gov/dcsp/smallbusiness/consult_directory.html). |
| **COMMUNICATION AND COORDINATION FOR EMPLOYERS ON MULTIEMPLOYER WORKSITES**
Includes Administrators, Faculty, and Employers

Resources:
https://www.osha.gov/shpguidelines/communication.html | • General contractors, contractors, and staffing agencies commit to providing the same level of safety and health protection to all employees.
• General contractors, contractors, subcontractors, and staffing agencies communicate the hazards present at the worksite and the hazards that work of contract workers may create on site.
• General contractors establish specifications and qualifications for contractors and staffing agencies.
• Prior to beginning work, general contractors, contractors, and staffing agencies coordinate on work planning and scheduling to identify and resolve any conflicts that could impact safety or health.
• Includes the following:
  ✓ Administrators, faculty, and advisory committee work together to establish an effective communication structure for the program.
  ✓ All program stakeholders are included in the program communications structure, including administrators, faculty, advisory committee members, safety subgroup members, students, employers, work-based learning supervisors, etc.
  ✓ Communication and coordination processes are focused on providing students with authentic industry learning and experience.
  ✓ Program leadership serves as the designated host employer for the communications and coordination processes.
  ✓ Program leadership coordinates student work-based learning activities to ensure appropriate learning placement. |

Recommendations for Operationalizing the OSHA 10-Hour Safety Outreach Training for the Construction and General Industries

Operationalizing the OSHA 10-Hour Construction Safety Outreach Training
12+ Hours to Prepare Construction Students for Industry

Center: * Introduction to OSHA, * Personal Protective Equipment, * Health Hazards, * Hazard Recognition Process

Petals: Falls; Electrocution; Struck-By; Caught-In or Between; Cranes, Derricks, Hoists, Elevators, Conveyors; Excavations; * Materials Handling, Storage, Use and Disposal; * Scaffolds; * Stairways and Ladders; * Tools – Hand and Power

Mandatory Topics
Introduction to OSHA – 2 Hours
Personal Protective Equipment - .5 Hours
Health Hazards - .5 Hours

Hazard Recognition Process
3 Hours

Focus Four Hazards
Falls – Min 1.5 Hours
Others – Min .5 Hours
4 Hours Total

Elective Topics
* 2-Hours; Min 2 Topics

Operationalizing the OSHA 10-Hour General Industry Safety Outreach Training
12+ Hours to Prepare General Industry (Manufacturing) Students for Industry

Center: ▪ Introduction to OSHA, ▪ Personal Protective Equipment, ▪ Walking-Working Surfaces, ▪ Exit Routes, Emergency Action Plans, Fire Prevention Plans & Fire Protection, ▪ Hazard Communication, ▪ Electrical, * Hazard Recognition Process

Petals: Introduction to Industrial Hygiene; Bloodborne Pathogens; Ergonomics ½ Hour; Safety & Health Programs ½ Hour; Machine Guarding ½ Hour; Materials Handling ½ Hour; Hazardous Materials; Fall Protection

Job Hazard Analysis (Optional Topic) 1 Hour

Mandatory Topics
▪ Introduction to OSHA – 2 Hours
▪ Protective Equipment - 1 Hours
▪ Walking-Working Surfaces – 1 Hour
▪ Exit Routes, Emergency Action Plans, Fire Prevention Plans & Fire Protection – 1 Hour
▪ Hazard Communication - 1 Hour
▪ Electrical – 1 Hour

Hazard Recognition Process
2 Hours (+ 1 hour Optional)

Elective Topics
• 2-Hours; Min 2 Topics
• ½ Hour/Topic min.
• 4 Topics Recommended

Optional Topics
* 1-Hour; Min 1 Topic