

Environmental Health and Safety Program Guide

January 2024



Jeff Elliott, Garden City

Occupational Safety and Health Act of 1970

“To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health.”

Environmental Protection Act of 1970

“Its objectives are to conserve natural resources and the existing natural environment and, where possible, to repair damage and reverse trends.”

Environmental Health and Safety Guide Contents

Note: Hyperlinks are subject to change and may not work. Please report any broken links at:
<https://www.ksre.k-state.edu/agsafe/feedback/index.html>

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Dan Foster, Colby

The Purpose

The purpose of the program guide is to assist you in accessing and understanding the programs available to you to create healthy and safe work environments for faculty, staff, and students. All programs identified can be found on the Environmental Health and Safety webpage located at <http://www.ksre.k-state.edu/agsafe/>. The Environmental Health and Safety office is available to provide guidance in program development.

Occupational Health and Safety at K-State

Occupational safety and health is the responsibility of each employee at the university, see KSU policy: <https://www.k-state.edu/policies/ppm/3700/3720.html#occup>. In addition, each person of authority at the university is responsible for those employees under his or her supervision. This responsibility begins with the President and flows down to each person within the structure of the university. The personal and collective safety and health of students and employees are of primary importance. Cooperation among the administration, faculty members, staff members, and student body is necessary for the development and preservation of an enviable safety record. Effective standards, as well as proper attitudes, are required for the maintenance of workplace safety.

K-State College of Agriculture Statement of Commitment

Kansas State University's College of Agriculture is committed to maintaining a healthy and safe environment for its students, faculty, staff visitors, and neighbors. We strive to foster a culture of safety and environmental protection among users of all our facilities.

Members of the College of Agriculture community should therefore comply with all environmental health and safety laws, regulations, and with current best practices; especially in laboratory and field settings. In addition, members of the community should commit to continuous improvement in their efforts to minimize adverse environmental impacts and safety risks by committing to a culture of safety in the College's operations by:

- Accepting the critical role each person has in protecting his or her own safety and occupational health, as well as that of others.
- Recognizing the critical importance of adherence to the highest standards for safety and occupational health for our students, staff, and the communities around us.
- Minimizing air and water pollution, and waste generation.
- Incorporating safety and environmental protection into all operations, including but not limited to experimental design, facility construction, and equipment specifications.
- Providing students and employees with health, safety and environmental education targeted to maximize safe work practices and to minimize the potential for injury or illness.

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- Creating an environment where individuals are able to recognize and to report errors without fear of reprimand or punishment.
 - Providing appropriate and timely information in response to questions or concerns about environmental health and safety issues.
 - Investigating incidents, disseminating lessons learned to faculty, staff and student workers, and modifying programs, as appropriate, to incorporate any potential improvements identified.
 - Creating an environment of collaboration among all stakeholders, including researchers, environmental health and safety coordinators, students, and staff.
 - Identifying health, safety, and environmental issues and resolving them in a time efficient manner.

The College's Environmental Health and Safety staff working closely with oversight committees, has developed programs and standards of practice designed to further the above goals. **Department heads, directors, unit leaders, lab managers, and other supervisors are responsible for implementing this commitment of responsibility.**

Employee Training

Training is an essential part of every environmental health and safety management program for protecting workers. It is the responsibility of the department supervisor to ensure training is provided to their assigned employees based on the hazards associated with their jobs.

Training must include nature of hazards involved in the task performed and how to control or eliminate the hazards. Each employee must be able to recognize and avoid unsafe conditions. Documentation of training must include: the subject trained, name of the instructor, the name and signature of employees trained, and a detailed description of the content of the training and any handouts. Training records should be kept on file for the duration of the employee's employment.



Scott Maxwell, Garden City

Determining Training Needs and Training Providers

The OSHA Hazard Awareness Advisor and VIVID Training Assessment can be used to determine the training needs based on the specific hazards associated with the assigned work tasks performed in the department. Once the training needs have been identified, refer to the Table of Contents of this EHS Resource Guide for the program elements and training required to meet regulatory compliance. **Special Note:** To aid in the understanding of how the EHS programs work and the available resources, any employee, regardless of title, that supervises another employee must complete the MANDATORY EHS SUPERVISOR TRAINING (3 Part) SERIES:

1. "EHS How It Works-Part One" eLearning course at <https://www.ksre.k-state.edu/agsafe/training/specialized/ehshowitworkspartonefinal/story.html>
 2. "EHS How It Works-Part Two: The First Six" eLearning course at <https://www.ksre.k-state.edu/agsafe/training/specialized/ehshowitworksfirstsixfinal/story.html>
 3. "EHS How it Works-Part Two: The Final Six" <https://www.ksre.k-state.edu/agsafe/training/specialized/ehshowitworksparttwofinalsix2/story.html> (eID and password required; contact your department EHS Coordinator for assistance).
- » **Manager's Environmental Health and Safety Training Needs Assessment** assists you in determining an employee's training needs based on the hazards associated with their assigned job duties. https://www.ksre.k-state.edu/agsafe/training/Manager%20EHS%20Training_Needs%20Assessment_Fillable%20Form_01.21.17backup.pdf.
- » **OSHA Hazard Awareness Advisor:** The Advisor will ask a series of questions designed to identify your potential hazards. Following the questions, the Advisor will prepare a text report identifying hazards that may be present in your workplace, providing best practices or strategies to control

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Employee Training, continued

them, and listing applicable standards that you can later review. Select Agriculture-Heavy Industrial Environment for the most comprehensive assessment. Once you have completed the assessment you can find the program elements and required training in this resource guide for implementation in your area. <https://webapps.dol.gov/elaws/osha/hazard/notfor.asp>

- » **VIVID/HSI Online Learning System** offers over 100 environmental health and safety training courses. In addition, VIVID/HSI provides a Training Needs Assessment driven by a series of questions. Based on your answers you will receive a printout of the OSHA-required courses and their training frequency such as new hire, annual, periodic, or when there is a change in job assignment or task performed. Contact your Departmental Safety Coordinator or the College of Agriculture Environmental Health and Safety office for enrollment assistance with the VIVID/HSI system. VIVID/HSI Customer Service contact information: (800) 956-0333 or customerservice@learnatvivid.com
 - **Training Needs Assessment:** <https://vividlearningsystems.com/training-needs-assessment> and
 - **VIVID Course Catalog:** <https://hsi.com/course-library>
 - **HSI/VIVID Administrator Resources:** <https://www.k-state.edu/safety/training/vivid/admin-resources/>. These tutorials assist program administrators in effectively managing the online eLearning system for their organization.
 - **HSI/VIVID Member/Student Resources:** <https://www.k-state.edu/safety/training/vivid/member-resources/>
- » **CITI Online Learning** offers numerous courses such as Animal Handling, Skid Loader, and Biological Lab Safety training. https://www.ksre.k-state.edu/agsafe/training/CITI%20WPS%20Training%20Instructions_06.21.16.pdf
- » **Certified Training Institute:** offers the Worker Protection Standard training for WPS Worker or Handler. <https://www.ksre.k-state.edu/agsafe/training/index.html>
- » **OSHA 360 Training:** offers numerous Heavy Equipment Operator Certification Courses based on type of equipment being used. Heavy equipment operators must be certified. There is an associated cost for the online certification which must be approved by the Supervisor. <https://www.360training.com>
- » **COA Environmental Health and Safety Office** offers live training and a wide variety of online training courses. Contact the College of Agriculture Environmental Health and Safety office if you need assistance . <http://www.ksre.k-state.edu/agsafe/training/index.html>
- » **K-State Environmental Health and Safety** offers live and online training courses. <https://www.k-state.edu/safety/training/>
- » **Departmental Orientation** must be conducted with all existing and new hire employees, and documentation kept on file in the department. New Hire Orientation Checklist: https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html. To assist you the COA has created a New Hire

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Employee Training, continued

eLearning course that contains department orientation forms for labs, farms, and general use. These maybe revised to meet your specific training needs. Access to the training materials is in the Specialized Training tab on the COA EHS homepage: <https://www.ksre.k-state.edu/agsafe/>. You will need to contact your supervisor for the username and password.

- » **Training Course Frequency Requirements:** COA, <https://www.ksre.k-state.edu/agsafe/training/index.html> and OSHA, <https://vividlearningsystems.com/blog/oshas-required-training-frequencies>
The Grain Industry has special training requirements, including: dust hazards, dust accumulation, ignition control and prevention, cleaning/clearing/housekeeping procedures, hot work procedures, preventative maintenance, lockout/tagout and bin entry and engulfment hazards (for those entering bins). In other agriculture-related workplaces where employees are required to use tractors, annual training regarding rollover protective structures is required and those using farm field equipment, farmstead equipment, and cotton gins are required to have safe operating and guarding training annually.
- » **Supervisor Safety Training: Guide to Managing Health, Safety and Environmental Risks.** <https://www.bookstore.ksre.ksu.edu/pubs/MF2715.pdf>
- » **OSHA EHS Safety Managers Course:** <https://www.oshatrain.org/courses/mods/700e.html>. Includes: Safety Management System Components, Commitment, Accountability, Employee Involvement, Effective Communications, Hazard Identification, Hazard Control Strategies, Accident Investigation Basics, Safety Education, and Training. There is a small fee for issuing the completion certificate.

All department-specific training must be kept on file with the supervisor.

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Accident Reporting

Accident reporting is an EH&S critical program component. All incidents should be reported immediately. Reporting identifies hazards that need to be eliminated which helps prevent future incidents. Plus, the employee can receive the appropriate medical treatment to better their chances of a faster, smoother recovery.



Kenny Rohleder, Hays

» **K-State Worker's Compensation Program** covers reporting requirements, authorized medical attention, non-emergency and emergency medical treatment, time off, disability compensation, Family Medical Leave Act, return to work, and fraud and abuse reporting. Refer to Human Capital Services (HCS) for reporting and worker's compensation questions.

<https://www.k-state.edu/policies/ppm/4800/4820.html#workersc>

» **Report Forms**

• **Accident Report (1101-A) (Employee ID and password required.)**

<https://www.k-state.edu/safety/incident.html>

Supervisors are now required to complete an injury investigation that is included at the bottom on the incident report online form. To assist you in completing it accurately, refer to:

<https://www.k-state.edu/safety/docs/KSU-Incident-Report-Review-Supervisor-Investigation.pdf>.

• **WC Mileage Reimbursement Form**

https://healthbenefitsprogram.ks.gov/ssif/workers_compensation_forms

• **State Self Insurance Fund: Questions**

<https://healthbenefitsprogram.ks.gov/ssif>

The College of Agriculture Environmental Health and Safety office investigates all incidents to identify the causes and provides resources to prevent injuries, save lives, promote a positive workplace, and demonstrate a commitment to health and safety management.

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Aerial Lifts

The major cause of injury and fatalities involving aerial lifts are falls, electrocution, and collapses or tip-overs. Aerial devices include boom-supported aerial platforms, such as cherry pickers, bucket trucks, aerial ladders, and vertical towers. All employees working with an aerial lift must be trained operators.

Operators must complete the following:

» **Review OSHA CFR 1926.453 Aerial Lifts.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.453>

» **Review the Aerial Lift Standard of Practice.**

http://www.ksre.k-state.edu/agsafe/manuals_forms/Aerial%20Lift%20Operations_10.01.16_Final.pdf

» **Review KSU Industrial and Utility Mobile Vehicle Policy:** *<https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>*. **Note: No employees under the age of 18 can run equipment.**

» **Complete the VIVID Online Aerial and Scissor Lift Safety.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Complete the Aerial Lift Operator Performance Audit.**

https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html

» **Perform a Pre-Use Inspection before operating equipment** using the provided checklist:

https://www.ksre.k-state.edu/agsafe/manuals_forms/Aerial%20Lift%20Operations_10.01.16_Final.pdf or use a form provided specifically by the equipment manufacturer.

» **Additional Resources:**

• **OSHA Aerial Lifts**

<https://www.osha.gov/SLTC/etools/scaffolding/aeriallifts/index.html>



Aerial Boom Lift

Aerial lift inspection forms and performance audits should be kept on file with the departmental manager/supervisor. All department-specific training must be kept on file with the supervisor.

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Agriculture Safety

Agricultural workers are at a very high risk for fatal and nonfatal injuries including lung diseases, noise-induced hearing loss, skin diseases, bodily crushing, and amputations. In addition, certain cancers are associated with chemical use and prolonged sun exposure. Employees working in agriculture must be trained to recognize the hazards and eliminate or control the hazards.



Wayne Aschwege, Hays

- » **Review 29 CFR 1928 Agriculture Standards.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1928>
- » **Review 29 CFR 1910.272 Grain Industry.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.272>
- » **Review OSHA Agriculture Operations, Hazards, and Controls.**
https://www.osha.gov/dsg/topics/agriculturaloperations/hazards_controls.html
- » **Complete the Agriculture Safety Quiz.** (Employee ID and password required.)
https://kstate.qualtrics.com/jfe/form/SV_eXyW3NLDnLu6x13
- » **Additional Resource:**
 - **Agricultural Operations.**
<https://www.osha.gov/dsg/topics/agriculturaloperations/publications.html>

All department-specific training must be kept on file with the supervisor.

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Animal (Farm) Handling Safety

Employees must have an understanding of animal behavior to avoid and control dangerous situations. Learning an animal's predictable behavior can prevent harm to the individual or animal.



Marissa Johnson, Manhattan

- » **Review National Agriculture Safety Database: Animal Handling Safety**
<http://nasdonline.org/44/d001612/handling-farm-animals-safely.html>
- » **Review the University of Minnesota Extension Service: Safety with Animals**
<http://nasdonline.org/1621/d001502/safety-with-animals.html>
- » **Complete the Animal (Farm) Handling Safety Quiz.** (Employee ID and password required.)
https://kstate.qualtrics.com/jfe/form/SV_82eLLW0pH7w6esOp
- » **Complete required IACUC training:** <https://www.k-state.edu/comply/iacuc/>. For questions about K-State IACUC, contact the URCO office: 785-532-3233.
- » **Animal Handling Video Resources:**
 - K-State University Compliance Office (IACUC)
<https://www.k-state.edu/comply/index.html>
 - Sheep Handling; Work Smarter, Not Harder
<https://www.youtube.com/watch?v=V8jt4TLAwwU>
 - Goat Handling: Worker Smarter, Not Harder
https://www.youtube.com/results?search_query=safe+handling+of+goats
 - Livestock Handling: Safety on the Farm (National Farmers Union)
<https://www.youtube.com/watch?v=xh2-uwIWARA>
 - Dairy Cow Handling:
<http://csu-cvmb.colostate.edu/academics/erhs/agricultural-health-and-safety/Pages/dairy-videos.aspx>
 - Swine Safe Handling: <https://www.youtube.com/watch?v=zvDTCNGNRCY>
 - Horse Safe Handling: Basics <https://www.youtube.com/watch?v=XJif22DLGII>
- » **Complete the Beef Quality Assurance Online Training Programs for those working with cattle.**
<https://www.bqa.org/beef-quality-assurance-certification/online-certifications>
- » **Review Beef Quality Assurance Manuals:** National Manual, Field Guide, Care and Handling of Cattle, and Transportation. <https://www.bqa.org/resources/manuals>. Use these programs as a guide to develop department-specific safety procedures.

All department-specific training must be kept on file with the supervisor.

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Arthropod Containment Guidelines

The Arthropod Containment Guidelines are a product of the work of the American Committee of Medical Entomology, a subcommittee of the American Society of Tropical Medicine and Hygiene. The guidelines provide a reference for research laboratories to assess risk and establish protocols for the safe handling of arthropod vectors of human and animal disease agents. The guidelines were originally published in 2004 and have been updated here to reflect the spectrum of vector taxa under investigation, and the demands of working with vector arthropods in the context of the Select Agent Rule.



- » **Review the Arthropod Containment Guidelines 3.2:** https://www.k-state.edu/comply/ibc/lab_inspections/ACL%20Guidelines%20version%203.2.pdf
- » **Complete the KSU University Research and Compliance, Arthropod Containment Guidelines video course:** https://www.k-state.edu/comply/ibc/ac_guidelines/index.html
- » **Conduct routine inspections using the forms based on the level of containment:**
 - **ACL 1:** <https://webfiles.ehs.ufl.edu/GT/ACL1.pdf>
 - **ACL 2:** https://www.cdc.gov/cpr/ipp/inspection/docs/Import_Permit_Checklist_ACL-2.pdf
 - **ACL 3:** https://www.cdc.gov/cpr/ipp/inspection/docs/Import_Permit_Checklist_ACL-3.pdf
- » **Additional Resources:**
 - **KSU University Research and Compliance Office:** <https://www.k-state.edu/comply/index.html>

All department-specific training must be kept on file with the supervisor.

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Asbestos/Lead Safety

All building components shall be inspected for asbestos and lead-based paint prior to any alterations. This includes all renovations or demolitions of any institutional, commercial, public, industrial, residential, or farm structure owned by Kansas State University and affiliates. Employees working on projects that contain asbestos/lead building materials shall be asbestos certified through the K-State EHS department. In addition, K-State building occupants should have an asbestos/lead awareness training.



Shane Garrett, K-State Asbestos/Lead Inspector

- » **Review OSHA 29 CFR 1910.1001 Asbestos Standard.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1001>
- » **Complete the VIVID Online Asbestos and Lead Hazard Awareness course (non-asbestos workers).**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

Or

- » **Complete the K-State Asbestos/Lead Awareness for Building Occupants (Course Code: WTD166)**
 - Contact Learning and Development at learning-develop-hr@k-state.edu.
- » **Review K-State Environmental Health and Safety Procedure for Handling Asbestos/Lead.**
<https://www.k-state.edu/safety/occupational/asbestos-lead/asbestos-handling.html>
- » **Additional Resources:**
 - **OSHA Asbestos Overview/Fact Sheet**
<https://www.osha.gov/SLTC/asbestos/index.html>
<https://www.osha.gov/Publications/OSHA3507.pdf>

All department-specific training must be kept on file with the supervisor.

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Bloodborne Pathogens Safety

Employees who during their course of employment may come into contact with human blood or potentially infectious body fluids must be trained before the assignment of a task where occupational exposure may take place and annually thereafter.



- » **Review the Bloodborne Pathogen Standard of Practice.**
https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Complete the OSHA Exposure Control Plan (if applicable):** *https://www.osha.gov/sites/default/files/CPL_2-2_69_APPD.pdf*
- » **Review OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030.**
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10051&p_table=STANDARDS
- » **Complete the VIVID Online Bloodborne Pathogen Training.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Review the Occupational Medical Program.**
https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Review Animal Needlestick Prevention. Producers and Vets (if applicable).**
<http://umash.umn.edu/wp-content/uploads/2015/12/Needlestick-Prod-Vet-FactSheet.pdf>
- » **Additional Resources:**
 - **KSU Bio and Sharps Waste Procedures:** *<https://www.k-state.edu/safety/docs/Biohazardous-Medical-Waste-Management-FINAL.PDF>*.

All department-specific training must be kept on file with the supervisor.

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Combustible Dust Safety

Employees exposed to combustible dust such as candy, sugar, spice, starch, flour and feed, grain, wood, pesticides, pharmaceuticals, and metals are in danger because the finely divided material form can become explosive under certain conditions, causing severe injuries or death. Employees need to be trained to recognize and control dust hazards.



O.H. Kruse Feed Mill, Kansas State University, Manhattan

- » **Review the OSHA Combustible Dust: An Explosion Hazard.**
<https://www.osha.gov/dsg/combustible-dust/guidance.html>
- » **Complete the VIVID Online Introduction to Combustible Dust Hazards.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete the Grainnet Dust Control in the Grain Industry; Problems and Solutions Archived Webinar Feb. 14th, 2017.**
<http://www.grainnet.com/webinars-archived>
- » **OSHA Hazard Alert: Combustible Dust Explosions.**
<https://www.osha.gov/Publications/OSHA-3791.pdf>
- » **Review KSU Advanced Methods of Dust Control:**
<https://www.osha.gov/harwoodgrants/grantmaterials/fy2013/sh-24936-sh3>
- » **Additional Resources:**
 - **Combustible Dust: Does your company or firm process any of these products or materials in a powdered form?**
<https://www.osha.gov/Publications/combustible-dust-poster.pdf>

All department-specific training must be kept on file with the supervisor.

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Compressed Gases/Air Safety



Bruce Ramundo, Manhattan

Compressed gas cylinders are associated with a number of different hazards such as potentially explosive conditions, cryogenic temperatures, and contain gases that are flammable, oxidizing, toxic, corrosive, and reactive. Employees using compressed gases must be trained to recognize and control these hazards.

» **Complete the VIVID Online Training for Compressed Gases.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Perform departmental evaluations using the Compressed Gas Self-Inspection Checklist.**

<https://www.cdc.gov/niosh/docs/2004-101/chklists/r1n29c-1.htm>

» **Evaluate Chemicals and Compressed Gas for appropriate segregation for compatibility:**

Chemical and Compressed gas section *https://ors.od.nih.gov/sr/dohs/Documents/General_Chemical_Storage_Compatibility_Chart.pdf*

» **Additional Resources:**

- **OSHA 29 CFR 1910., 1915, 1917 and 1926 Compressed Gas.**

<https://www.osha.gov/SLTC/compressedgasequipment/standards.html>

- **OSHA 29 CFR 1910.169 Air Receivers: Compressed Gas/Air.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.169>

- **K-State Pressure Vessels (Lab Safety Manual).**

<https://www.k-state.edu/safety/lab/labsafety/topics/specifichazards/pressureVessels.html>

All department-specific training must be kept on file with the supervisor.

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Confined Spaces Safety

A confined space has limited openings for entry or exit, is large enough for entering and working, and is not designed for continuous human occupancy. Examples of confined spaces in agriculture are vaults, tanks, grain storage bins, manholes, boot, receiving and manure pits, silos, pipelines, and sewers, each representing various hazards.



Chance Fiehler, Manhattan

- » **Review OSHA 29 CFR 1910.146 Permit-Required Confined Spaces.**
https://www.osha.gov/pls/osha/web/owadisp.show_document?p_id=9797&p_table=STANDARDS
- » **Review Confined Space Standard Operating Procedure.**
http://www.ksre.k-state.edu/agsafe/manuals_forms/Confined%20Space_10.02.15.pdf
- » **Complete the VIVID Confined Space Entry-Permit Required training.** Training must be completed by any employee entering into a permit-required confined space. Employees entering non-permit spaces must complete the VIVID Confined Space Training.
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete the Confined Space Competent Person 8-hour live training course.**
 - *Contact the College of Agriculture EHS Office for enrollment information.*
- » **Review Confined Space on a Farm:**
<https://www.osha.gov/Publications/OSHA3939.pdf>
- » **Review Confined Space Manure Storage Hazards** (if applicable).
<https://extension.psu.edu/confined-space-manure-storage-hazards>
- » **Review Grain Industry Confined Space/Boot Pits.** <https://cb4q22fjdsqw370gsj3m681um-wpengine.netdna-ssl.com/wp-content/uploads/NGFA-Final-PRSC-Boot-Pit-Guidance-Document.pdf>

Issued confined space permits need to be kept on file for a period of one year.

All department-specific training must be kept on file with the supervisor.

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Electrical Safety (LO/TO)/Generators

All employees must be able to identify and control electrical hazards associated with their assigned work environment. Fatal and nonfatal injuries can occur if exposed to energized electrical lines, damaged tools and equipment, inadequate wiring, overloaded circuits, exposed electrical parts, improper grounding, damaged insulation, and operating electrical equipment in wet areas.

Employees should not work on electrical equipment unless the following circumstances have been met to determine “normal” equipment condition, and the employees have received the appropriate training and are determined to be qualified in accordance to the NFPA 70E standards to work on or near electrical components:



Kolten Harshbarger, Manhattan

1. The equipment is properly installed in accordance to the manufacturer recommendations and applicable industry codes and standards.
2. The equipment is properly maintained in accordance to the manufacturer recommendations and applicable industry codes and standards.
3. The equipment is properly used in accordance with the instructions included in the listing and labeling in accordance with manufacturer’s instructions.
4. Equipment doors are closed and secured.
5. Equipment covers are in place and secured.
6. There is no evidence of impending failure such as arcing, overheating, loose or bound equipment parts, visible damage, or deterioration.
7. (New 2024) The equipment is rated for the available fault current.

If a normal condition is not met the employee must be trained and determined to be qualified in accordance with the NFPA 70 E guidelines and implement NFPA 70 E safe work practices. If not, contact an outside contractor to provide the necessary services.

Employees Performing Electrical Work or Equipment Maintenance

- » **Review the COA Electrical Lockout and Tagout Standard Operating Procedure.**
https://www.ksre.k-state.edu/agsafe/manuals_forms/LOTO_12.11.23%20final%202.pdf

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Electrical Safety, continued

- » **Complete the VIVID Electrical Safety online learning course.**
- » **Complete the VIVID Advanced Lockout and Tagout online learning course.**
- » **Complete NFPA 70E Training.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Review the Fluke Safety for electrical measurements:**
<https://www.fluke.com/en-us/learn/online-courses/digital-multimeter-basics-online-course>
- » **Review the Electrical Safety Train the Trainer Manual:** *https://www.osha.gov/sites/default/files/2018-12/fy07_sb-16615-07_train-the-trainer_manual2.pdf*
- » **PERFORMANCE AUDIT:**
<https://www.cdc.gov/nora/councils/manuf/lotto/pdfs/LOTO-Periodic-Inspection-Template.pdf>

Employees NOT Performing Electrical Work or Equipment Maintenance

- » **Complete the VIVID Electrical Safety (OVERVIEW) online learning course.**
- » **Complete the VIVID Lockout and Tagout (OVERVIEW) online learning course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

Employees Using Generators

- » **Review Using Portable Generators Safely to include Grounding requirements.**
https://www.osha.gov/OshDoc/data_Hurricane_Facts/portable_generator_safety.html and https://www.osha.gov/OshDoc/data_Hurricane_Facts/grounding_port_generator.html and <https://www.osha.gov/sites/default/files/publications/OSHA3286.pdf>
- » **Additional Resources:**
 - **Self-Inspection Checklist Items: Electrical Panels:** *https://www.smscx.org/Repository/OnePagers/SMCX_OnePager_Self_Inspection_Checklist_Items_Electrical_Panels_Mar2022.pdf*

All department-specific training must be kept on file with the supervisor.

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Emergency Planning and Response

An emergency action plan is critical to departmental operations to prevent disorganization, confusion, injury, and property damage. Each department is required to have a plan specific to their assigned area to include emergency contact numbers. All employees must be trained in how to respond in an emergency situation.



- » **Review the COA Emergency Action Manual.** In addition, specific departmental plans must be reviewed by employees.

https://www.ksre.k-state.edu/agsafe/manuals_forms/EmergencyActionManual.pdf

- » **Complete the VIVID online Emergency Response and Fire Preparedness.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

Departmental Tools:

- » **Department Emergency Guide Template** can be used to customize your emergency response plan. To access, click Emergency Guide in the link below and under the last bullet with the title Planning Resources. *https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html*

- » **K-State Emergency Plan and Guide** for the university provides general guidelines on how to handle various types of threats. *<http://www.k-state.edu/police/emergency/>*

- » **K-State Emergency Management Plan** provides the framework for managing the immediate actions and operations to respond to an emergency or a disaster on the Manhattan campus.

Note: Emergency Response: *<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.151>*. Employees need to have readily available access to medical treatment. In the absence of medical services in remote locations that are more than 5 minutes from medical service providers, a person or persons must be adequately trained to render first aid and CPR in the event of a medical emergency. First aid training is provided by HSI/VIVID or more advanced training is provided by Lafene Health Center on the main campus. See First Aid/CPR.

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Environmental Health and Safety Programs at Work for You *<https://www.ksre.k-state.edu/agsafe/>*

Emergency Planning and Response, continued

Also, KSU Police Department conducts A.L.I.C.E. Active Shooter Training; contact KSU PD for more information at <https://www.k-state.edu/police/>.

Special Note from KSU Fire Marshall-Onsite Personnel Housing:

Fire and life safety requirements for houses containing 3 or less occupants:

1. Hardwired, battery-backed up, interconnected smoke detectors throughout. These smoke detectors shall be present in all occupied bedrooms, and in hallways 30 ft. or greater in length. Smoke detectors shall also be present on each level of the house, specifically living areas, taking into account one smoke detector can monitor approximately a 900 sq. ft. open area. This will provide early warning for occupants located on other floors where the fire may not originate.
2. 2A:10B:C clearly visible and accessible fire extinguishers. A person shall not travel more than 75 ft. in order to access a fire extinguisher. Occupants of the houses shall be trained as how to properly operate the extinguishers, and the extinguishers shall be inspected monthly and documented.
3. Egress windows for sleeping rooms.
4. Evacuation plan showing primary and secondary egress routes on each occupied level of the house.
5. Exit doors are not allowed to contain more than one locking device (i.e. deadbolts). Deadbolts only permissible if part of a lockset that when the doorknob/lever is turned, it retracts the deadbolt at the same time.
6. Combustible storage not permitted underneath stairs.
7. Occupied Upper levels emergency light required at top of stairway.

Fire and life safety requirements for houses containing 4 or more occupants:

1. Shall meet requirements 1–7 listed above.
2. 1¾-inch thick solid bonded wood core (i.e. 20-min rated) doors for all occupied sleeping rooms. These doors shall also contain self-closing devices.
3. Internally or externally illuminated exit sign for secondary egress door (not required for main entrance).
4. Emergency light on each occupied level to illuminate exit paths.

Departmental emergency plans should be sent to the College of Agriculture Environmental Health and Safety office to be uploaded to the Environmental Health and Safety secured intranet site for easy referral.

All department-specific training must be kept on file with the supervisor.

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Emergency Showers/Eye Wash

Employees who are exposed to corrosive material must be provided with suitable facilities for quick drenching or flushing of the eyes and body immediately after exposure. Employees must be trained on the location and how to properly use and maintain the equipment.



Kyle Griffith, Manhattan

- » **Review COA Emergency Shower/Eyewash Installation, Use, Testing, and Maintenance Standard Operating Procedure.**

http://www.ksre.k-state.edu/agsafe/manuals_forms/Emergency%20Shower%20Eyewash_08.14.15.pdf

- » **Complete the VIVID Online Emergency Eyewash and Shower course.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

- » **Review Emergency Shower and Eyewash Station Testing Video.**

<https://www.youtube.com/watch?v=8vpSYktSMDC>

- » **Additional Resources:**

- **ANSI Eyewash Compliance Guide.**

<https://www.eyewashdirect.com/ansi-eyewash-z358-eyewash-standard-guide/>

- **Emergency Shower and Eyewash Station Requirements (Quick Tip #120).**

<https://www.grainger.com/content/qt-emergency-shower-eye-wash-stn-req-120>

- **Important Note: Emergency showers (only) on main campus are tested by the College of Agriculture Environmental Health and Safety department.**

All department-specific training must be kept on file with the supervisor.

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Ergonomics

Employees performing tasks that require heavy lifting, bending, reaching overhead, pushing and pulling heavy loads, working in awkward body postures, and performing the same or similar tasks repetitively are exposed to musculoskeletal disorders (MSDs). Employees must be trained on how to prevent injuries.



Lynn Harshbarger, Garden City

- » **Review OSHA Ergonomics/Safety and Health Topic.**
<https://www.osha.gov/SLTC/ergonomics/identifyprobs.html>
- » **Select applicable courses through the VIVID: Back Safety, Industrial Ergonomics, or Office Ergonomics options.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Evaluate Computer Workstations using OSHA's checklist:** *<https://www.osha.gov/etools/computer-workstations/checklists/evaluation>*
- » **Additional Resources:**
 - **View the COA Biomechanics and Proper Material Handling Video.**
<https://www.youtube.com/watch?v=F8gYLyK6m4c>
 - **Laboratory Safety Ergonomics for the Prevention of Musculoskeletal Disorders/OSHA.**
<https://www.osha.gov/sites/default/files/publications/OSHAfactsheet-laboratory-safety-ergonomics.pdf>
 - **Simple Solutions: Ergonomics for Farm Workers/CDC.**
<https://www.cdc.gov/niosh/docs/2001-111/pdfs/2001-111.pdf>
 - **Back Injury Prevention Guide with Quizzes (MF2762).**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2762.pdf>
 - **Laptop Use At Home, Work, or School:** *<https://www.youtube.com/watch?v=ZLwIP8cBaWA>*

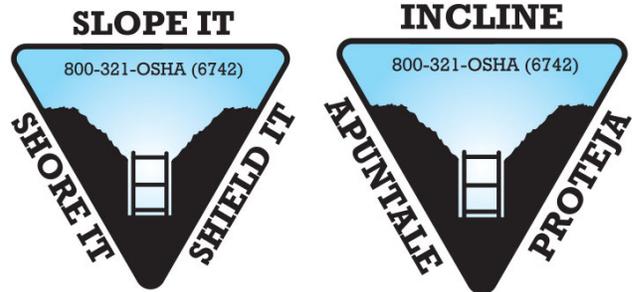
All department-specific training must be kept on file with the supervisor.

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Environmental Health and Safety Programs at Work for You *<https://www.ksre.k-state.edu/agsafe/>*

Excavation Safety

Employees working in excavation areas are exposed to potential cave-ins, falls, falling loads, hazardous atmospheres, and incidents involving mobile equipment. Employees must be trained before working in or near trenching or excavation areas.



- » **Review Excavation Standard 29 CFR 1926.651.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.651>
- » **Complete the VIVID online Excavation, Trenching, and Shoring course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete Excavation Competent Person 8-hour live training course.**
 - *Contact the COA EH&S Office for enrollment information.*
- » **Utilize the Excavation and Trenching Checklist.**
<https://www.osha.gov/SLTC/etools/construction/trenching/excavchec.html>
- » **Additional Resources:**
 - **OSHA Trenching and Excavation Safety Guide.**
<https://www.osha.gov/Publications/osha2226.pdf>
 - **OSHA Trenching and Excavation Safety OSHA Fact Sheet.**
https://www.osha.gov/sites/default/files/publications/trench_excavation_fs.pdf
 - **DIG Safe /Kansas One-Call (811) Before You Dig.**
<https://www.kansasonecall.com/>

All department-specific training must be kept on file with the supervisor.

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Fall Protection (Personal Arrest System)

Employees working from overhead platforms, elevated work stations, and holes in floors or walls must be prevented from falls. Employees must be trained and provided the necessary fall protection equipment to prevent injuries from falls.



Charlie Clark, Topeka

- » **Review the OSHA Fall Protection Standards 29 CFR 1910.23, .25, .26, .27, .66, .67, .68, .132, .140, and Construction 1926.**
*<https://www.osha.gov/SLTC/fallprotection/standards.html>
<https://www.osha.gov/SLTC/fallprotection/construction.html>*
- » **Evaluate the Fall Protection Program using the OSHA Checklist:** *https://www.osha.gov/sites/default/files/2018-11/fy14_sb-26317-sh4_FallProtectionChecklist--English.pdf*
- » **Review the General Industry Fall Protection Assessment Tool:** *https://www.ksre.k-state.edu/agsafe/manuals_forms/General%20Industry%20Fall%20Protection%20Assessment%20Tool%20-%20Unprotected.docx*
- » **Review the Fall Protection Standard of Practices:** *https://www.ksre.k-state.edu/agsafe/manuals_forms/Fall%20Protection%20Program%20Draft.docx*
- » **Complete the VIVID online Personal Fall Arrest Systems course for general awareness.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the Vivid system.*
- » **Complete Fall Protection Competent Person and Competent Equipment Inspector training for employees supervising the fall protection program for their site that is provided online by ACE Trained, Inc.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance.*
- » **Complete the Fall Protection Authorized User training for employees who are involved in the fall protection program using the equipment that is provided online by ACE Trained, Inc.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance.*
- » **Utilize the Fall Equipment Inspection Checklist prior to use and at least annually by a competent inspector.**
<https://www.fallprotectionusa.com/wp-content/uploads/2020/08/3M-Fall-Pro-Inspection-Checklist-Logs.pdf>

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Fall Protection, continued

» **Additional Resources :**

- **Fall Protection Guide with quizzes course (MF2761).**

<https://www.bookstore.ksre.ksu.edu/pubs/MF2761.pdf>

- **Fall Prevention Fact Sheet.**

<https://www.osha.gov/stopfalls/factsheet.pdf>

All department-specific training must be kept on file with the supervisor.

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Environmental Health and Safety Programs at Work for You *<https://www.ksre.k-state.edu/agsafe/>*

Farm Equipment Safety

Employees operating farm equipment are exposed to numerous life-threatening and debilitating injuries. Employees must be trained in accordance to each piece of equipment's manufacturer's operations manual. Employee equipment operation performance should be monitored and documented by supervisors to ensure compliance.



Dave Bowen, Garden City

- » **Review 29 CFR 1928 Agriculture Standards.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1928>
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ that includes a post-test. Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment's manufacturer operations manual and successfully complete an operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection. **Special note: This course ONLY reviews the certification process and resources. It DOES NOT certify the operator by taking this course.**
- » **Review Farm Machinery and Equipment — Agriculture General Safety Rules: Tractor, Combine, Baling Hay, and Tillage Equipment.** In addition, you must review the specific equipment's operations manual. **Note:** Additional farm equipment safety information is elsewhere in this guide, so please refer to the table of contents.
https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>
Note: No employees under the age of 18 can run equipment.
- » **Review the Kansas Supplement to Safe Operation of Agricultural Equipment.**
<https://www.ksre.k-state.edu/agsafe/training/SafeOperationofAgricultureEquipment.pdf>
- » **Review Safety on the Farm: Power Take Off (PTO).** National Farmers Union.
<https://www.youtube.com/watch?v=4o2wiyigMyk>
- » **Complete the Farm Equipment Safety Quiz.** (Employee ID and password required.)
https://kstate.qualtrics.com/jfe/form/SV_2ryushGFqx9lqUl
- » **Complete a Competency Checklist for Operation of Powered Mobile Equipment** using a form provided by the specific equipment manufacturer or this form: https://www.ksre.k-state.edu/agsafe/manuals_forms/Powered%20Mobile%20Equipment%20Performance%20Guide.pdf

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Farm Equipment Safety, continued

- » **Complete a pre-use inspection** in accordance with the equipment manufacturer specifications in the equipment operations manual.
- » **Review the Inspection Frequency Chart:**
https://www.ksre.k-state.edu/agsafe/manuals_forms/Inspection%20Frequency%20Chart.docx
- » **Complete the Combine Operator Safety Training (if applicable):** <https://nasdonline.org/951/d000792/agricultural-engineering-safety-lesson-plan-combine-operator-safety.html> and <https://www.youtube.com/watch?v=bff54zrpyOE>
- » **Complete the Combine Safety quiz at** https://kstate.qualtrics.com/jfe/form/SV_73V0uA6ODX7SPBA
- » **Rollover Protection — must be conducted initially and annually. Complete the Rollover Protection interactive e-learning course at** <https://www.ksre.k-state.edu/agsafe/training/specialized/rollover/story.html> (To access this course you will need to contact your EHS Coordinator for the secured username and password.)
- » **Additional Training: Please complete the below training courses based on employee's assigned tasks.** (Employee ID and password required for Qualtrics quizzes.)
 - **Chipper/Shredder Safety with quizzes (MF2710).** <https://www.bookstore.ksre.ksu.edu/pubs/MF2710.pdf>
Quiz: https://kstate.qualtrics.com/jfe/form/SV_bd4ocqjFfFtEjVb
 - **Mowing and Trimming Safety with quizzes (MF2714).**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2714.pdf>
Quiz: https://kstate.qualtrics.com/jfe/form/SV_6RMAYop49yPrKYZ
 - **Tree Trimming Safety with quizzes (MF2712).** <https://www.bookstore.ksre.ksu.edu/pubs/MF2712.pdf>
Quiz: https://kstate.qualtrics.com/jfe/form/SV_3PD7YRhiV5WuZ2l
 - **Transporting Farm Equipment.** <https://ppp.purdue.edu/wp-content/uploads/2016/08/PPP-83-reduced.pdf>
 - **Keep the Trailer Connected to the Truck.** <https://www.extension.purdue.edu/extmedia/ppp/ppp-92.pdf>
Quiz: https://kstate.qualtrics.com/jfe/form/SV_9BIb7NpWIUzIpyB
 - **Chain Saws — Safety, Operations, Tree Felling Techniques (MF2103).**
<https://www.bookstore.ksre.ksu.edu/pubs/mf2103.pdf> and
Stihl Chainsaw Operations and Maintenance Video at
<https://www.stihlusa.com/information/videos/chainsaw-safety-operations-maintenance-videos/>
Complete chain saw safety quiz. https://kstate.qualtrics.com/jfe/form/SV_d9YVnKJeI6ZfEQ5
 - **Safety Inspection Checklist – Chop Saws and Miter Saws:** <https://safetyconsultant.net/wp-content/uploads/2015/12/Safety-Inspection-Checklist-Chop-Saws-and-Miter-Saws.pdf>
- » **Additional Resources:**
 - **Farm Vehicle Placarding Requirements:** <https://nasdonline.org/2065/section3/d001906/agricultural-equipment-on-public-roads.html>

Special Note: Heavy Equipment Operators must be certified prior to operating any heavy equipment. Refer to the Heavy Equipment section in this EHS Resource Guide to ensure regulatory compliance operating heavy equipment.

All department-specific training must be kept on file with the supervisor.

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Environmental Health and Safety Programs at Work for You <https://www.ksre.k-state.edu/agsafe/>

Field Research and Sanitation

Agriculture employees who perform field operations must be provided with potable drinking water and sanitation facilities.



Mark Golembosky, Colby

» **Review 29 CFR 1928.110, Field Sanitation.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1928/1928.110>

» **Complete the Field Sanitation Quiz.** (Employee ID and password required.)

https://kstate.qualtrics.com/jfe/form/SV_1TtH6CWY96KkqvH

» **Complete the VIVID Field Research Course.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Review Safety Guidelines for Field Researchers.**

<https://ib.berkeley.edu/courses/bio1b/field/pdf/SafetyGuidelinesforFieldResearchers.pdf>

and develop a field research safety plan using the provided template.

» **Additional Resources**

• **Safety Guidelines for Field Researchers.**

<https://ib.berkeley.edu/courses/bio1b/field/pdf/SafetyGuidelinesforFieldResearchers.pdf>

• **Fact Sheet #51 Field Sanitation Standards.**

<https://www.dol.gov/whd/regs/compliance/whdfs51.pdf>

• **Water and Sanitary Facilities in the Field.**

<http://nasdonline.org/931/d000773/water-and-sanitary-facilities-in-the-field.html>

• **Tickborne Illness Prevention: CDC Guide** — <https://www.cdc.gov/ticks/index.html>

• **Tickborne Illness Personal Protective Equipment, several examples to explore:**

<https://www.insectshield.com/pages/insect-shield-your-clothes;>

[https://www.insectshield.com/;](https://www.insectshield.com/) and

<https://www.bugbaffer.com/> to reduce exposure to ticks carrying disease.

All department-specific training must be kept on file with the supervisor.

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Fire Safety (Fire Extinguisher)

Employees need to be trained regarding the fire hazards associated with their work environment and what to do in the event of a fire emergency. If employees are expected to respond in an emergency they need to know how to appropriately use the equipment.



Andrew Klein, Manhattan

- » **Review the K-State Fire Plan.** It includes fire and life safety policy, inspections, life safety codes, fire extinguishers, hot work permits, fire watch, equipment impairments, and other topics.
<http://www.k-state.edu/safety/fire/>
- » **Complete the VIVID Fire Extinguisher Training and Emergency Response and Fire Preparedness.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete Hands-on Fire Extinguisher Training offered by either the College of Agriculture Environmental Health and Safety Office or the K-State Fire Safety Department.**
 - *Online training is required prior to hands-on class. Contact KSU Learning and Development at learning-develop-hr@k-state.edu.*

Additional Resource:

- **OSHA Fire Safety Fact Sheet**
https://www.osha.gov/OshDoc/data_General_Facts/FireSafetyN.pdf
- **Preparing for Fire Marshall Inspection — Prevent Violations:**
<https://firemarshal.ks.gov/DocumentCenter/View/337/Fire-Inspection-Brochure---What-to-Expect-When-You-Are-Inspected-PDF>.

All department-specific training must be kept on file with the supervisor.

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First Aid/CPR

Employees need to have readily available access to medical treatment. In the absence of medical services in remote locations that are more than 5 minutes from medical service providers, a person or persons must be adequately trained to render first aid and CPR in the event of a medical emergency. First aid training is provided by HSI/VIVID or more advanced training is provided by Lafene Health Center on the main campus.



» **Review the OSHA Medical and First Aid 29 CFR 1910 standards.**

<https://www.osha.gov/SLTC/medicalfirstaid/standards.html>

» **Complete the VIVID First Aid Training.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

Note: This online training does not meet the certification for CPR. You must contact Lafene Healthcare Center for additional training.

- In addition, Emergency Planning and Bloodborne Pathogens (BBP) training that includes a review of the BBP Exposure Control Plan must be taken before rendering first aid or cleaning up blood as an assigned duty.

» **Review OSHA or K-State First Aid Kit content requirements.**

KSU <https://www.k-state.edu/safety/occupational/first-aid-kits/>

OSHA NEW First Aid Kit List: <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.266AppA#:~:text=1%20Gauze%20pads%20%28at%20least%204%20x%204,Scissors.%208%20At%20least%20one%20blanket.%20More%20items>

» **Additional Resources:**

- **First Aid and CPR Programs are offered by Lafene Health Center and KSU Public Safety.**

Contact the COA EH&S Office for enrollment assistance for these programs.

- **OSHA Best Practices Guide: Fundamentals, of Workplace First-Aid Program.**

<https://www.osha.gov/Publications/OSHA3317first-aid.pdf>

All department-specific training must be kept on file with the supervisor.

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Food Safety

OSHA indicates, “Foodborne diseases are the illnesses contracted from eating contaminated food or beverages. Illnesses include foodborne intoxications and infections, which are often incorrectly referred to as food poisoning. There are many different foodborne diseases that are caused by viruses, bacteria, parasites, toxins, metals, and prions. Symptoms of foodborne illness range from mild gastroenteritis to life-threatening neurologic, hepatic, and renal syndromes.

Botulism, Brucellosis, Campylobacter enteritis, Escherichia coli, Hepatitis A, Listeriosis, Salmonellosis, Shigellosis, Toxoplasmosis, Viral gastroenteritis, Taeniasis and Trichinosis are examples of foodborne diseases. These diseases may be occupationally related if they affect the food processors (e.g., poultry processing workers), food preparers and servers (e.g., cooks, waiters), or workers who are provided food at the worksite.”



- » **Complete the ServSafe online training programs:** Food Manger, Food Handler, Workplace Safety, and Food Allergens based on job task assignment. Anyone working with or around food must be trained appropriately. <https://www.servsafe.com/>
- » **Review OSHA Food Safety Program Elements:** Food safety programs must include food procurement, storage, preparation, water quality, and foodborne illness medical management. <https://www.osha.gov/foodborne-disease/abatement-requirements>
- » **Review FDA Food Management Plan Builder** to assist you in creating your specific food safety plan. <https://www.cfsanappsexternal.fda.gov/scripts/foodSafetyPlanBuilder/>
- » **Conduct a food safety assessment using the mobile device format.** Once completed, the report will be sent to your email address. https://kstate.qualtrics.com/jfe/form/SV_0oLuCxoc10kY1Lw
- » **Additional Resources:**
 - **Kansas Food Code-Kansas Department of Agriculture.** https://agriculture.ks.gov/docs/default-source/fsl--handouts/2012_kda_food_code_12_14_12.pdf?sfvrsn=d3ca5c1_6
 - **Food Safety Educational Resources, Kansas Department of Agriculture.** <https://agriculture.ks.gov/divisions-programs/food-safety-lodging/food-safety-educational-materials>
 - **Kansas State University Food Safety and Sanitation.** <https://www.k-state.edu/safety/sanitation/>
 - **Kansas State University Rapid Response Center.** <https://www.rrc.k-state.edu/>

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Grain Industry Safety/ Grain Bin Entry

The agriculture industry is dangerous and exposes a worker to a number of different hazards, including moving mechanical equipment/parts, suffocation, electrocution, dust explosions, and engulfment.



Bill Riley, Topeka

» **Review OSHA 29 CFR 1910.272 Grain Handling Facilities.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.272>

Implement the program's elements designed to create a safe work environment. There are special training requirements identified and hazard control measures including dust control and equipment

preventative maintenance criteria for implementation. In addition, to enhance the knowledge of grain facility managers it is imperative that managers complete the IGP Grain Handling manager's training depending on the milling operation. To access course catalog and enrollment details refer to this link: <https://www.grains.k-state.edu/igp/>

» **Review Grain Bin Entry Standard of Practice.** Provides guidelines for employees who are required to perform grain bin entry.

http://www.ksre.k-state.edu/agsafe/manuals_forms/Grain%20Bin%20Entry%20Final.pdf

» **Review Sweep Auger Standard of Practice.** Provides general guidelines employees for employees working inside a grain bin with a sweep auger or conveying equipment.

http://www.ksre.k-state.edu/agsafe/manuals_forms/Sweep%20Auger%20Final.pdf

» **Review Harvest Safety.** https://ehs.unl.edu/sop/s-harvest_safety.pdf

» **Complete Grain Industry Safety Quiz.** (Employee ID and password required.)

https://kstate.qualtrics.com/jfe/form/SV_1EY8CNOwlho5gpf

» **Review the National Grain and Feed Association Safety and Health Compliance Manual.**

<https://imis.ngfa.org/images/uploads/Safety-and-Health-Compliance-Manual-1.pdf>

» **Review OSHA Agriculture Industry Standards:** <https://www.osha.gov/laws-regs/regulations/standardnumber/1928>

» **Review the Grain Industry Overview of Safety and Health Compliance Manual.**

<https://www.ngfa.org/wp-content/uploads/Overview-of-Safety-and-Health-Compliance-Manual.pdf>

» **Review Confined Space/Boot Pits.** <https://cb4q22fswq370gsj3m681um-wpengine.netdna-ssl.com/wp-content/uploads/NGFA-Final-PRSC-Boot-Pit-Guidance-Document.pdf>

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Grain Industry Safety, continued

» Additional Resources:

- **OSHA Fact Sheet:** <https://www.osha.gov/Publications/grainstorageFACTSHEET.pdf> and <https://www.osha.gov/grain-handling>
- **Grain Handling Coalition:** <https://www.youtube.com/watch?v=2a50Sb57YN0>
- **Grain Bin Safety:** <https://web.extension.illinois.edu/agsafety/equipment/grainbinsafety.cfm>
- **Safe Storage and Handling of Grain:** <https://extension.missouri.edu/publications/g1969>
- **Grain Handling Standard:**
http://grainsafetytraining.org/Grain_Handling_Standard_for%20GOEPS_Storyline_output/story_html5.html
- **Grain Bin Safety “Protecting Yourself and Your Family:**
<https://www.youtube.com/watch?v=YDwJCdjlZYE&feature=youtu.be>
- **Grain Hazards Module 1:**
http://grainsafetytraining.org/Hazard_ID_Module_1_Storyline_output/story_html5.html
- **Grain Hazards Module 2:**
http://grainsafetytraining.org/Hazard_ID_Module_2_Storyline_output/story_html5.html
- **Grain Hazards Module 3:**
http://grainsafetytraining.org/Hazard_ID_Module_3_Storyline_output/story_html5.html
- **Grain Hazards Module 4:**
http://grainsafetytraining.org/Hazard_ID_Module_4_Storyline_output/story_html5.html

All department-specific training must be kept on file with the supervisor.

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Hand-Powered Tool Safety

Employees who use hand and power tools are exposed to the hazards of falling, flying, abrasive, and splashing objects, or to harmful dusts, fumes, and mists. Employees must be issued the appropriate personal protective equipment and be trained in the proper use of all tools. Workers should be able to recognize the hazards associated with the different types of tools and the necessary safety precautions.



Marvin Farmer, Colby

- » **Review OSHA 29 CFR 1910.241-1910.244 Hand Powered Tools.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.241>
- » **Complete VIVID Hand Powered Tool and Hand Safety courses.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Perform routine departmental hand tool inspections to identify and replace defective tools.**
https://www.ksre.k-state.edu/agsafe/manuals_forms/Hand%20and%20Power%20tools.pdf
- » **Additional Resources:**
 - **OSHA Hand Powered Tool Guide.**
<https://www.osha.gov/Publications/osha3080.pdf>
 - **OSHA Abrasive Wheel Checklist.**
<https://www.osha.gov/SLTC/machineguarding/new-grinder-checklist.html>

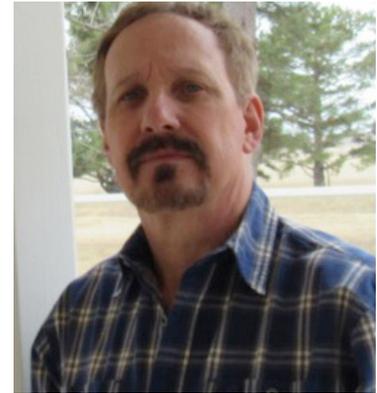
All department-specific training must be kept on file with the supervisor.

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Hazard Assessments (Safety Audits)

Conducting regular inspections for all operations, equipment, work areas, and facilities is a critical component in reducing the employee's exposure to hazards.



Joe Becker, Hays

» **Complete VIVID Safety Audit course.**

- Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.

» **Conduct Laboratory Inspections.** Inspections should be conducted on a routine basis using the laboratory inspection form. Hard copy inspection tool:

https://www.ksre.k-state.edu/agsafe/manuals_forms/KSU%20Ag%20Lab%20Safety%20Inspection%20Checklist%202020-01-21.pdf

OR Mobile inspection tool: https://kstate.qualtrics.com/jfe/form/SV_dpdn7ww8dVRZmJL

» **Conduct agriculture inspections for all other areas.** Inspections should be conducted routinely, using the farm inspection form. Hard copy form:

https://www.ksre.k-state.edu/agsafe/manuals_forms/Farm%20Safety%20Inspection%20Checklist_12.03.15_R2.pdf

OR Mobile inspection tool: https://kstate.qualtrics.com/jfe/form/SV_ebRP4POkFgIp5A2

» **Conduct office inspections in all areas.** Inspections should be conducted routinely, using the General Departmental Safety Checklist. It is available in hard copy form: https://www.ksre.k-state.edu/agsafe/manuals_forms/General%20Departmental%20EHS%20Inspection%20Checklist.pdf

» **Review the Inspection Frequency Chart:**

https://www.ksre.k-state.edu/agsafe/manuals_forms/Inspection%20Frequency%20Chart.docx

» **Additional Resource:**

- **OSHA Self-Inspection Checklist** can be used as a comprehensive inspection tool that is safety-category specific such as portable, ladders, welding, elevated surfaces, etc.

https://www.rit.edu/~w-outrea/OSHA/documents/Module2/M2_SelfChcklst.pdf

- **Risk Assessment Tool:** User's Guide provides a means to assess, prioritize, and mitigate hazards in the work environment.

https://www.ksre.k-state.edu/agsafe/manuals_forms/Risk%20Assessment%20Template_01.23.18.pdf

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Hazard Assessments, continued

- **Job Safety Analysis Tool:** is a procedure that helps identify job task potential hazards and determines control measures.

Fact Sheet: https://www.ksre.k-state.edu/agsafe/manuals_forms/JSA%20Fact%20Sheet_08.20.15.pdf

Form: https://www.ksre.k-state.edu/agsafe/manuals_forms/JSA%20Task%20Analysis%20Form_08.20.15.pdf

It is important that documentation of inspections be kept on file. The inspection form is a great training tool to educate staff to identify hazards in their areas and how to eliminate and control those hazards.

All department-specific training must be kept on file with the supervisor.

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Hazard Communication (Chemical Safety)

Hazardous materials are important elements in the workplace, they range from cleaning fluids to pharmaceuticals, pesticides, and paints. Some chemicals have the potential to cause adverse effects, including health and physical hazards. The HazCom program is designed to protect workers from these effects.



Hai Xia, Manhattan

- » **Review the KSU Hazard Communication Policy.** It provides employees with the necessary information to protect their health and well-being working with chemical hazards. <https://www.k-state.edu/safety/docs/Hazard-Communication-Standard.pdf>
- » **The VIVID Hazardous Communication training must be completed by employees using hazardous chemicals.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Review the Chemical and Hazardous Material Management program.** Assists in chemical management, providing a centralized chemical inventory. In addition, VIVID offers high hazard training for Flammables, Benzene, Hexavalent Chromium, Formaldehyde, Hydrogen Sulfide, Chlorine, and Silica. <https://www.k-state.edu/safety/lab/chemical/>
- » **Evaluate Chemicals and Compressed Gas for appropriate segregation for compatibility:** *Chemical and Compressed gas section* https://ors.od.nih.gov/sr/dohs/Documents/General_Chemical_Storage_Compatibility_Chart.pdf
- » **Review the KSU EHS Assistant Program.** This program is an online tool to assist KSU personnel in managing their hazardous chemical and radiological materials. All laboratories must maintain an up-to-date chemical inventory within this system. <https://www.k-state.edu/safety/lab/chemical/ehsassistant/>
- » **Review the Chemical Labeling Secondary Container requirements.** When pouring a chemical from their original container into a secondary container OSHA has specific requirements of labeling. To assist you in meeting the regulation, review the video <https://youtu.be/jJntdm2htZc>. In addition, the KSU EHS Department has provided secondary label templates: https://www.ksre.k-state.edu/agsafe/manuals_forms/GHS%20Label-templates.pdf or https://www.ksre.k-state.edu/agsafe/manuals_forms/Chemical%20GHS-Ethanol%2070%20percent%20and%2010%20percent%20Bleach%20Label.pdf.

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Hazard Communication (Chemical Safety), continued

» **Additional Resources:**

- **Working Safely Around Hazardous Substances (MF2760).**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2760.pdf>
- **OSHA Steps to an Effective Hazard Communication Program**
<https://www.osha.gov/Publications/OSHA3696.pdf>
- **Hazard Communication Standard: Labels and Pictograms**
<https://www.osha.gov/Publications/OSHA3636.pdf>
- **OSHA Hazardous Communication Standard: Safety Data Sheets**
<https://www.osha.gov/Publications/OSHA3514.pdf>
- **OSHA 1910.1000 Table Z-2 Toxic and Hazardous Substances:**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1000TABLEZ2>
Classification List of Peroxide Forming Chemicals:
<https://ehs.ucsc.edu/lab-safety-manual/specialty-chemicals/peroxide-formers-list.html>
- **Review the Chemical and Hazardous Material Management program.** Assists in chemical management, providing a centralized chemical inventory. In addition, VIVID offers high hazard training for Flammables, Benzene, Hexavalent Chromium, Formaldehyde, Hydrogen Sulfide, Chlorine, and Silica.

Special Note: All chemicals must be inventoried and registered in the KSU EHS Assistant:

<https://www.k-state.edu/safety/lab/chemical/ehsassistant>

This program is an online tool to assist KSU personnel in managing their hazardous chemical and radiological materials. All departments must maintain an up to date chemical inventory within this system.

All department-specific training must be kept on file with the supervisor.

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Hazardous Waste Safety

Hazardous waste management helps to protect human health and the environment. The Environmental Protection Agency has the cradle-to-grave system. K-State's Environmental Health and Safety department provides waste management services.



- » **Review the KSU Hazardous Waste PPM 3745:**
<https://www.k-state.edu/policies/ppm/3700/3745.html>
- » **Review Hazardous Waste Pick-up** webpage, which contains the Request a Pick-up Form, Categories of Hazardous Waste, and Proper Labeling Requirements.
<https://www.k-state.edu/safety/environmental/hazardous-waste/>
- » **Complete Hazardous Waste Awareness Training:** VIVID Course now offers Hazardous Waste Awareness Training specific to Kansas State University to be completed by any employee generating hazardous waste, upon initial hire and annually thereafter.
 - **Initial Hazardous Waste Awareness Course (EHS 018):**
<https://www.k-state.edu/safety/training/hazardous-waste/index.html>
 - **Hazardous Waste Refresher Course (EHS014):**
<https://www.k-state.edu/safety/training/hazardous-waste-refresher/>
- » **Complete the Kansas State University Environmental Management Questionnaire.** Send to the KSU EHS Dept. at safety@ksu.edu or (785) 532-5856 if you have determined you are generating hazardous waste. https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Spills:** Small spills: Personnel can clean up small spills if they have the appropriate personal protective equipment and have been trained. Notify EHS at 532- 5856.
Large, dangerous, or toxic spill: Evacuate area and call 911.
- » **Complete the Annual College of Agriculture Laboratory Spill Response Drill:** https://www.ksre.k-state.edu/agsafe/manuals_forms/COA%20Lab%20Spill%20Reponse%20Procedure.pdf
- » **Additional Resources:**
 - **Laboratory Clean-out:** <https://www.k-state.edu/safety/environmental/labcleanout/>
 - **Medical Waste:** <https://www.k-state.edu/safety/environmental/medical-waste/>

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Hazardous Waste Safety, continued

- **Controlled Substances:** <https://www.k-state.edu/safety/environmental/controlled-substance/>
- **Recycling:** <http://www.k-state.edu/recycling/>
- **Air Contaminants OSHA Table Z-1:**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1000TABLEZ1>
- **Air Permitting-Clean Air Act:** <https://www.k-state.edu/safety/environmental/air-permit/>

All department-specific training must be kept on file with the supervisor.

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Hearing Conservation

Employees working in the agriculture industry are exposed to high noise levels that can cause temporary or permanent hearing loss. Noise-induced hearing loss can be prevented by incorporating the hearing conservation program elements.



Jared Petz, Hutchinson

- » **Review the KSU Hearing Conservation Program.**
<https://www.k-state.edu/safety/occupational/hearing-conservation/>
- » **Complete VIVID Hearing Conservation course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Schedule and Complete Hearing Screening Evaluation/Medical Surveillance.** Contact your environmental health and safety coordinator.
https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Additional Resources:**
 - **Hearing Conservation Guide.**
<https://www.osha.gov/Publications/osa3074.pdf>
 - **Farming is Noisy Business — Don't Let it Steal Your Hearing.**
<http://nwdistrict.ifas.ufl.edu/phag/2018/01/26/farming-is-noisy-business-dont-let-it-steal-your-hearing/>
 - **Hearing Conservation for the Agriculture Community (MF2875).**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2875.pdf>

All department-specific training must be kept on file with the supervisor.

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Environmental Health and Safety Programs at Work for You *<https://www.ksre.k-state.edu/agsafe/>*

Heat/Cold Stress

Employees working in agriculture are exposed to extreme weather conditions — from extreme heat to extreme cold. Employees need to be trained how to prevent adverse exposure and be able to recognize symptoms.



Amanda Burnett, Tribune

- » **Review OSHA Cold Stress Card.**
<https://www.osha.gov/Publications/OSHA3156.pdf>
- » **Review OSHA Heat Illness: Protecting Workers from the Effects of Heat Fact Sheet.**
https://www.osha.gov/OshDoc/data_Hurricane_Facts/heat_stress.pdf
- » **Complete VIVID Cold Stress and Heat Stress courses.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Utilize the Heat Safety Tool (Voluntary)**, a mobile phone app that measures heat index and risk level. https://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html
- » **Additional Resources:**
 - **Climate Change and Worker Health.**
<http://climatehealthconnect.org/wp-content/uploads/2016/09/Workers.pdf>

All department-specific training must be kept on file with the supervisor.

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Heavy Equipment Safety

Employees operating heavy equipment are exposed to many different hazards such as rollovers, being crushed in equipment, and running over others. Employees must be qualified as operators by training and experience operating the equipment.



- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>
Note: No employees under the age of 18 can run equipment.
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ **that includes a post-test.** Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment’s manufacturer operations manual and successfully complete an operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection. **Special note: This course ONLY reviews the certification process and resources. It DOES NOT certify the operator by taking this course.**
- » **Review 29 CFR 1926.600 Equipment and 1926.602 Material Handling.**
1926.600: <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.600>
1926.601: <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.601>
1926.602: <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.602>
- » **Review COA Heavy Equipment SOP:** https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Review the Inspection Frequency Chart:**
https://www.ksre.k-state.edu/agsafe/manuals_forms/Inspection%20Frequency%20Chart.docx
- » **Review the COA Bulldozer Operation Standard of Practice (if applicable).**
https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Complete the required Operator Certification Course based on type of equipment being operated provided by 360training.com.** There is an associated cost for the online certification which must be approved by the Supervisor. <https://www.360training.com>
- » **Review OSHA “Operation Specifics” Heavy Equipment.**
<https://www.osha.gov/SLTC/etools/hurricane/heavy-equip.html>

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Heavy Equipment Safety, continued

- » **Perform Operator Performance Audits** using the audit form for the specific piece of equipment being used: https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Perform Heavy Equipment Pre-Use/Daily Inspections using the provided inspection forms based on the type of heavy equipment being used.** Use the equipment manufacturer inspection form, if available, OR https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Rollover Protection — must be conducted initially and annually. Complete the Rollover Protection interactive e-learning course at** <https://www.ksre.k-state.edu/agsafe/training/specialized/rollover/story.html> (To access this course you will need to contact your EHS Coordinator for the secured username and password.)

All department-specific training must be kept on file with the supervisor.

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Hoist/Sling Safety (Material Handling)

Employees using lift equipment are exposed to hazards when performing material lift operations. Operators of lift equipment must be trained on proper equipment use in accordance to the manufacturer's operational instructions, how to conduct inspections, lockout and tagout procedures, and who to contact for repairs of defective equipment.



Garrett Glanzer, Manhattan

- » **Review 29 CFR 1910.179-1910.181 Material Handling and Storage.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.179>
- » **Review 29 CFR 1910.184 Slings.**
https://www.osha.gov/pls/osha/web/orwadisp.show_document?p_id=9834&p_table=STANDARDS and
<https://www.osha.gov/safe-sling-use/alloy>
- » **Complete VIVID Online Training: Overhead and Gantry Crane Safety and Introduction to Safe Material Storage.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete monthly crane/hoist inspections using the provided checklist or the equipment inspection form provided by the manufacturer.**
https://ehs.psu.edu/sites/ehs/files/appendix_b_-_crane_and_hoist_monthly_inspection_checklist.docx
- » **Conduct Sling Pre-Use and Monthly using the provided form:** <https://dkist.nso.edu/sites/atst.nso.edu/files/safety/SAF-0015e-A.pdf> or the inspection form provided by the equipment manufacturer.
- » **Additional Resources:**
 - **Cranes and Derricks in Construction-Small Entity Compliance Guide for the Final Rule.**
<https://www.osha.gov/Publications/OSHA3433.pdf>
 - **Crane, Hoist, Sling Safety Program.**
<https://protect.iu.edu/environmental-health/occupational-safety/equipment/crane-hoist-sling.html>
 - **Rigging Safety Overview:** <https://hsi.com/courses/rigging-safety-overview>

All department-specific training must be kept on file with the supervisor.

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Hot Work/Welding Safety

Employees performing hot work/welding tasks are exposed to many hazards such as exposure to metal fumes, ultraviolet light, burns, electrical shock, and cuts. Employees must be trained to identify and control these hazards.



Mark Leuthold, Manhattan

- » **Review OSHA 29 CFR 1910.251-1910.255 Welding, Cutting, and Brazing Standards**
<https://www.osha.gov/welding-cutting-brazing/standards>
- » **Complete VIVID Hot Work with Arc Welding course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete KSU Hot Work Permit (if applicable).**
<https://www.k-state.edu/safety/fire/hot-work/>
- » **Additional Resources:**
 - **KSRE Agriculture Engineering Safety Lesson Plan: Arc, TIP, and MIG Welding Safety.**
<http://nasdonline.org/952/d000793/agricultural-engineering-safety-lesson-plan-arc-tig-and.html>
 - **KSRE Agriculture Engineering Safety Lesson Plan: Oxyacetylene Welding.**
<http://nasdonline.org/944/d000785/agricultural-engineering-safety-lesson-plan-oxyacetylene-welding-safety.html>
 - **Controlling Hazardous Fume and Gases during Welding.**
<http://nasdonline.org/7256/d002482/controlling-hazardous-fume-and-gases-during-welding.html>

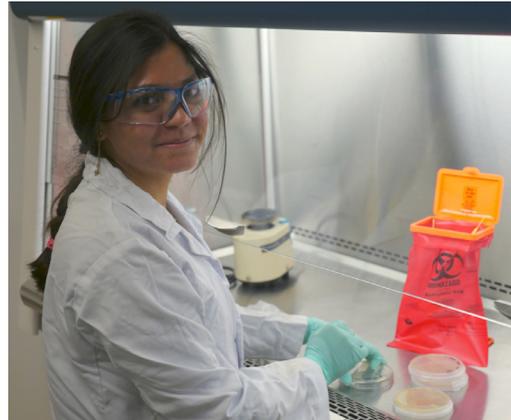
All department-specific training must be kept on file with the supervisor.

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Laboratory Safety

Employees working in laboratory environments are exposed to numerous potential hazards, including chemical, biological, physical, and radioactive hazards. Employees must be trained to recognize and control these hazards.



Ellen Mendez, Manhattan

- » **Review the K-State Lab Safety Manual**, which has established safety measures and procedures that you must follow. Includes a chemical hygiene program, biosafety manual, chemical inventory database and exposure control plan. <https://www.k-state.edu/safety/lab/labsafety/>
- » **Complete the VIVID Online Training for Lab Safety 3-part series:** “Analyzing Hazards,” “Developing and Using Controls,” and “Working Safely,” plus, any additional specialty training specific to lab research performed including the lab biological courses provided by University Research and Compliance: <https://www.k-state.edu/comply/>. For questions about it, contact the URCO office: 785-532-3233.
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Perform routine laboratory environmental health and safety audits** to identify and correct hazards. Hard copy inspection tool: https://www.ksre.k-state.edu/agsafe/manuals_forms/KSU%20Ag%20Lab%20Safety%20Inspection%20Checklist%202020-01-21.pdf
Or, use the Mobile Inspection Tool: https://kstate.qualtrics.com/jfe/form/SV_dpdn7ww8dVRZmJL
- » **Post laboratory signs, found at:** <https://www.k-state.edu/safety/lab/labsign/>
- » **Complete a laboratory spill response drill annually using this form:** https://www.ksre.k-state.edu/agsafe/manuals_forms/COA%20Lab%20Spill%20Reponse%20Procedure.pdf.
- » **Review KSU Chemical Hygiene Plan:** <https://www.k-state.edu/safety/docs/CHP-FINAL.PDF>
- » **Review Chemical Hygiene Plan Chemical Hazard Assessment:** https://www.ksre.k-state.edu/agsafe/manuals_forms/Lab%20Specific%20CHP%20Template%20Final.pdf
- » **Review the KSU EHS Assistant Program.** This program is an online tool to assist KSU personnel in managing their hazardous chemical and radiological materials. All laboratories must maintain an up-to-date chemical inventory within this system.
<https://www.k-state.edu/safety/lab/chemical/ehsassistant/>

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Laboratory Safety, continued

» **Review if applicable the Autoclave Safety Guidelines:**

<https://www.ehs.washington.edu/system/files/resources/autoclave-safety.pdf>

» **Review the Chemical Labeling Secondary Container requirements.** When pouring a chemical from their original container into a secondary container OSHA has specific requirements of labeling. To assist you in meeting the regulation, review the video <https://youtu.be/jJntdm2htZc>. In addition, the KSU EHS Department has provided secondary label templates: https://www.ksre.k-state.edu/agsafe/manuals_forms/GHS%20Label-templates.pdf or https://www.ksre.k-state.edu/agsafe/manuals_forms/Chemical%20GHS-Ethanol%2070%20percent%20and%2010%20percent%20Bleach%20Label.pdf.

» **Review Lab Chemical Labeling requirements:** <https://www.osha.gov/sites/default/files/publications/OSHAquickfacts-lab-safety-labeling-chemical-transfer.pdf>. Also, this short video helps to explain the requirements for secondary container labeling: <https://youtu.be/jJntdm2htZc>. The KSU EHS Office provides secondary label templates located on the COA EHS Webpage, select Guidance Documents scroll down to Hazardous Communcations: https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html.

» **Evaluate Chemicals and Compressed Gas** for appropriate segregation for compatibility: Chemical and Compressed gas section https://ors.od.nih.gov/sr/dohs/Documents/General_Chemical_Storage_Compatibility_Chart.pdf

» **Review Laboratory Closeout Procedure:** Departing researchers and staff responsible for laboratories should go through a laboratory check out process to ensure that hazardous substances and regulated materials in their labs are properly managed upon departure: <https://www.k-state.edu/safety/lab/labsafety/commissioning/closeout.html>.

» **Additional Resources:**

• **Chemical Safety Board: Identifying and Evaluating Hazards in Research Laboratories.**

<https://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/identifying-and-evaluating-hazards-in-research-laboratories.pdf>

• **KSU University Compliance Office (BSL Labs)**

<https://www.k-state.edu/comply/index.html> and

<https://www.cdc.gov/labs/pdf/CDC-BiosafetyMicrobiologicalBiomedicalLaboratories-2009-P.PDF>

Special Note: IBC training provided by CITI must be completed for all BSL laboratories:

<https://www.k-state.edu/comply/ibc/training/index.html>

BSL Labs must have an Exposure Control Plan: https://www.osha.gov/sites/default/files/CPL_2-2_69_APPD.pdf when working with Bloodborne Pathogens. https://www.osha.gov/sites/default/files/training-library_ppe_assessment.pdf

• **OSHA Laboratory Safety Guide.**

<https://www.osha.gov/sites/default/files/publications/OSHA3404laboratory-safety-guidance.pdf>

Special Note: Lab coat selection criteria is based on the hazards associated with your lab; please contact Cintas (785) 320-6275 to learn more about the importance of appropriate lab coat selection:

<https://www.youtube.com/watch?v=kKtjfp-lf5c>

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Laboratory Safety, continued

- **OSHA Fact Sheet Laboratory Safety Chemical Hygiene Plan (CHP).**

https://www.osha.gov/OshDoc/data_General_Facts/hazardouschemicalsinlabs-factsheet.html

Special Note: To assist you in determining if your lab waste is hazardous refer to the KSU Hazardous Waste Environmental Questionnaire to assist you. The form is located on the COA EHS homepage under the Hazardous Communications section in Guidance Documents: *https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html*. If you are generating hazardous waste, refer to the section in this EHS Resource Guide to ensure regulatory compliance.

All department-specific training must be kept on file with the supervisor.

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Ladder Safety

Employees who fall from heights suffer serious work-related injuries or death. Employees must be protected from fall hazards when working on ladders.

» **Review OSHA 29 CFR 1926.1053 Ladders.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1053>

» **Complete VIVID Ladder Safety Training course.**

• *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Perform routine documented ladder inspections using the provided checklist.** Keep copies for inspections on file in the department.

https://www.wernerco.com/docs/default-source/literature/ladder-safety-inspection-form.pdf?sfvrsn=ff6cdffd_0

» **Additional Resources:**

• **Agriculture: Protecting Workers from Tripod Orchard Ladder Injuries Quick Card.**

<https://www.osha.gov/Publications/OSHA3705.pdf>

• **OSHA Safe Use of Stepladders.**

<https://www.osha.gov/Publications/OSHA3662.pdf>



Trey Spinder, Manhattan

All department-specific training must be kept on file with the supervisor.

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Machine Guarding

Employees exposed to moving machine parts can suffer from amputations, lacerations, crushing injuries, abrasions, and death. Appropriate machine guarding is a hazard-control method to reduce the threat of injury.



Jeff Overmyer, Topeka

- » **Review 29CFR 1910.212 and 29 CFR 1928.57**, which establishes machine guarding requirements.
 - **29 CFR 1910.212:** <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.212>
 - **29 CFR 1928.57:** <https://www.osha.gov/laws-regs/regulations/standardnumber/1928/1928.57>
- » **Complete the VIVID Online Machine Guarding course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Perform routine departmental machine guarding audits using the OSHA Machine Guarding Checklist:**
https://www.osha.gov/sites/default/files/2018-12/fy10_sh-20856-10_Machine_Guarding_Checklist.pdf
- » **Additional Resource:**
 - **OSHA Machine Guarding Possible Solutions.**
<https://www.osha.gov/SLTC/machineguarding/solutions.html>

All department-specific training must be kept on file with the supervisor.

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Motor Vehicle Safety (DOT Regulations)

Motor vehicle accidents are the leading cause of work-related deaths. Employees must be trained on defensive driving techniques to reduce the potential risks associated with being a motor vehicle operator.



Randall Currie, Garden City

» **Complete the VIVID Online Driver Safety Course.**

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Complete the K-State Coaching the Van Driver (if applicable).** This course is required for all van drivers of any 8-, 12-, or 15-passenger vans. For the current course schedule, go to the Van Training webpage.

<http://www.k-state.edu/facilities/operations/training/van-training/index.html>

» **Additional Resources:**

- **Motor Vehicle Safety for the Landscaping and Horticultural Services Industry (MF2709)**

<https://www.bookstore.ksre.ksu.edu/pubs/MF2709.pdf>

- **Motor Vehicle Guidelines for Employers**

https://www.osha.gov/Publications/motor_vehicle_guide.pdf

- **OSHA Motor Vehicle Safety Fact Sheet**

https://www.osha.gov/OshDoc/data_Vehiclesafe/vehiclesafefactsheet.pdf

- **OSHA Motor Vehicle Safe Driving Quick Card**

<https://www.osha.gov/pls/publications/publication.athruz?pType=Industry&pID=141>

- **Special Note: Updated CDL Requirements:** Must use approved trainers by the Federal Motor Carrier Safety Administration: <https://tpr.fmcsa.dot.gov/>

- **Federal Motor Carrier Safety Administration**

<https://www.fmcsa.dot.gov/regulations/title49/b/5/3>

- **Kansas Department of Transportation**

<http://www.ksdot.org>

All department-specific training must be kept on file with the supervisor.

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Occupational Medicine Program

Medical surveillance is prevention-focused detection and elimination of the underlying causes of hazards or exposures in the workplace. The fundamental purpose of medical screening is early diagnosis and treatment of employees in the workplace.



» **Review Occupational Medicine Program.** Provides appropriate medical examinations and exposure monitoring in a timely manner to employees based on their position and responsibilities. (Scroll down the webpage to Medical Surveillance, then click on the Occupational Medicine link) https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
Includes:

- Appendix A: Employee Medical Program Examination Procedure
- Appendix B: Job Task Checklist
- Appendix C: Regulatory Matrix
- Appendix D: Sample Employee Medical Exam Notification
- Appendix E: Employee Medical Exam Matrix

» **Complete the VIVID Online courses** that provide training for which medical surveillance is required such as asbestos, hearing conservation, blood-borne pathogens, respiratory, pesticide application etc.

- *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Additional Resource:**

- **OSHA Medical Screening and Surveillance Guide.**
<https://www.osha.gov/Publications/osha3162.pdf>

All department-specific training must be kept on file with the supervisor.

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Office Safety

Employees who use a computer are at risk of developing musculoskeletal disorders (MSD). To reduce stress and strain of muscles, tendons, and skeletal system it is important to maintain neutral body postures, avoid prolonged periods of sitting, and reduce repetitive activities.



Milissa Alexander, Hays

- » **Review OSHA Computer Workstations.**
<https://www.osha.gov/SLTC/computerworkstation/index.html>
- » **Complete the VIVID Online Office Ergonomics course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Complete the VIVID General Office Safety Module series.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Review the Office Safety general guidelines.**
<https://www.chem.tamu.edu/rgroup/wooley/safety/18.pdf>
- » **Review Office Ergonomics Safety Video: Simple Solutions for Comfort and Safety.**
<https://www.youtube.com/watch?v=ofnpBtO1-gA>
- » **Perform an ergonomic evaluation of your computer workstation using the provided checklist.** Professional evaluations are provided by the College of Agriculture Environmental Health and Safety office.
https://www.osha.gov/SLTC/etools/computerworkstations/checklist_purchasing_guide.html
- » **Perform routine Office Safety inspections** using the checklist found here:
https://www.ksre.k-state.edu/agsafe/manuals_forms/Office%20Safety%20Checklist.pdf
- » **Additional Resource:**
 - **OSHA Ergonomics.**
<https://www.osha.gov/SLTC/ergonomics/index.html>

All department-specific training must be kept on file with the supervisor.

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Personal Protective Equipment

Employees must be trained and are required to wear the appropriate personal protective equipment (PPE) specified for the job task being performed. It is the employer's responsibility to provide PPE at no cost to the employee.



» **Review OSHA 29 CFR 1910.132 Personal Protective Equipment.**

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9777&p_table=STANDARDS

» **Complete the VIVID Online Personal Protective Equipment 7-module course.**

• *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Review the COA Personal Protective Equipment SOP.**

http://www.ksre.k-state.edu/agsafe/manuals_forms/PPE_10.02.15.pdf

» **Complete the COA PPE Hazard Assessment Form.**

http://www.ksre.k-state.edu/agsafe/manuals_forms/PPE%20Hazard%20Assessment%20Form_Editable%20pdf_01.05.18.pdf to assist you in selecting the appropriate PPE. Refer to the OSHA PPE Assessment Criteria: https://www.osha.gov/sites/default/files/training-library_ppe_assessment.pdf

» **Additional Resources:**

• **OSHA Personal Protective Equipment.**

<https://www.osha.gov/SLTC/personalprotectiveequipment/payment.html>

• **OSHA Fact Sheet Personal Protective Equipment.**

https://www.osha.gov/OshDoc/data_General_Facts/ppe-factsheet.pdf

• **OSHA Employers Responsibility to Supply and Pay for PPE:** https://www.osha.gov/sites/default/files/Handout_2_Employers_Must_Provide_and_Pay_for_PPE.pdf

All department-specific training and PPE assessments must be kept on file with the supervisor.

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Powered Industrial Truck Safety (Forklift and Pallet Jack)

Powered industrial trucks are commonly referred to as forklifts or lift trucks. They include skid loaders with vertical mast, tractors with forks, walkie stackers, and stand-behind forklifts. Employees operating any forklift equipment must be trained and evaluated to become certified operators.



Paul Blodgett, Manhattan

- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>. **Note: No employees under the age of 18 can run equipment.**
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ that includes a post-test. Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment's manufacturer operations manual and successfully complete the operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection. **Special note: This course ONLY reviews the certification process and resources. It DOES NOT certify the operator by taking this course.**
- » **Review the COA Powered Industrial Truck/Forklift Standard of Practice**, which serves as an essential element in identifying and managing risk to staff associated with forklift activities. http://www.ksre.k-state.edu/agsafe/manuals_forms/Powered%20Industrial%20Truck-Forklift_12.08.17_Final.pdf
In addition, OSHA provides a safety and operation checklist: <https://www.osha.gov/training/library/powerd-industrial-trucks/checklist>
- » **Complete the VIVID 5 Modules Forklift Operator Course and Intro to Pallet Jack Safety (if applicable).** All forklift operators must take the courses.
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **In addition to the VIVID training, if the operator is using a skid loader with forks, they must take the CITI Skid Loader Training.** http://www.ksre.k-state.edu/agsafe/training/CITI%20WPS%20Training%20Instructions_06.21.16.pdf

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Powered Industrial Truck Safety, continued

- If using a tractor with forks, the operator must complete the tractor safety course provided in the EHS Resource Guide. <https://bookstore.ksre.ksu.edu/pubs/MF3479.pdf>
- » **Complete the Operator Performance Evaluations** using the audit form in the standard operating procedure (SOP). A Forklift Performance Evaluation video is available to assist operators in the audit process and course set-up. <https://www.youtube.com/watch?v=KSZxFSN1ysg>
Operator performance audits need to be conducted every three years.
In addition, conduct Pallet Jack Performance audits using the provided form: https://www.ksre.k-state.edu/agsafe/manuals_forms/TWU-POWERED-PALLET-JACK-OPERATOR-EVALUATION-FORM.pdf
- **Special Note:** Personnel assigned to train and assess operator performance should complete the Forklift Train the Trainer online learning course: <https://iccms.catalog.instructure.com/browse/work-force/courses/forklift-train-the-trainer>. In addition, a video was created to help you setup the performance evaluation course: <https://www.youtube.com/watch?v=KSZxFSN1ysg>.
- » **Conduct Equipment Pre-Use Inspections as indicated in the manufacturer's operations manual.** If not provided by the manufacturer use the provided forms in the specific piece of equipment's Standard Operation Procedure (SOP). In addition, pre-use inspections need to be conducted on pallet jacks using the equipment manufacturer form or the provided form: https://www.ksre.k-state.edu/agsafe/manuals_forms/powered-pallet-jack-checklist.pdf
- » **Review OSHA Bulletin Unauthorized Modification of a Forklift.**
<https://www.osha.gov/publications/hib19960620>
- » **Additional Resources**
 - **Forklift Safety Frequently Asked Questions.**
<https://www.jjkeller.com/learn/forklift-operator-safety-faqs>
 - **Selecting the Correct Type of Forklift:** <https://risklogic.com/lift-trucks-choosing-the-correct-type-and-recommendations-for-associated-hazards/>
 - **Forklift Refueling Safety:** <https://cnforklifttraining.com/forklift-safety-guide-to-refueling-forklift-safely/>
 - **Forklift Battery Charging Procedure:** <http://dadelift.com/electric-forklifts-battery-charging-and-changing-procedures/>
 - **Lift Truck Safety (MF2759):** <https://www.bookstore.ksre.ksu.edu/pubs/MF2759.pdf>

Employees that complete the entire training process will be issued a certificate of completion and an operator wallet card from the College of Agriculture Environmental Health and Safety office.

All department-specific training must be kept on file with the supervisor.

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Prescribed Burning Safety

Employees who perform prescribed burning are exposed to hazardous, stressful, and strenuous conditions. Improperly managed burns or lack of knowledge of safety measures can result in serious injuries, death, and major property damage. Employees must be trained to recognize and control hazards associated with the duties assigned.



Eric Ward, Manhattan

» **Review KSU Prescribed Burning Safety.**

<https://www.bae.ksu.edu/docs/farm-safety/l565.pdf>

It is also available at: <https://www.bookstore.ksre.ksu.edu/pubs/L565.pdf>

» **Review KSU Prescribed Burning Training at**

<https://drive.google.com/file/d/1h46HIQm-zz94yZoofv1y511nW89IB5F3/view>

» **Complete the KSU Prescribed Burning Quiz at**

https://kstate.qualtrics.com/jfe/form/SV_8uDAR0YgPzoPBlk

» **Additional Resources:**

• **Review the USDA Wildland Firefighter Smoke Exposure.**

<https://www.fs.fed.us/t-d/pubs/pdfpubs/pdf13511803/pdf13511803dpi100.pdf>

• **Review KSRE Prescribed Burning Notebook** and attend the Kansas Joint-Agency Prescribed Burn Workshop offered at several locations around the state each fall/winter. For details, contact Jason Hartman at (785) 532-3316 or Walter Fick at (785) 532-7233.

https://www.butler.k-state.edu/docs/ag/rx_burning/bb%20winter.pdf

• **Review Wildland Fire Suppression and Prescribed Fire.**

<https://osha.oregon.gov/OSHARules/div7/div7N.pdf>

• **USDA Prescribed Burning Fact Sheet.**

https://efotg.sc.egov.usda.gov/references/public/ND/prescribed_burning_fact_sheet.pdf

• **Open Burning in Kansas — When is it Allowed?**

https://mcpersoncountys.us/DocumentCenter/View/1874/Open_burning_in_Kansas?bidId=

All department-specific training must be kept on file with the supervisor.

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Preventive and Corrective Maintenance

Occupational Health and Safety Administration (OSHA) considers preventive maintenance a form of hazard control in the workplace that prevents injuries. OSHA regulations 1910 to 1910.1450 require employers to implement a preventive-maintenance system that provides the following benefits: hazard identification, risk mitigation, repair cost reduction, accountability recognition, and maintenance activity documentation that keeps equipment functioning at its optimum level, reducing the threat of injury or loss of life.



- » **Review OSHA Grain Industry 1910.272 for specific requirements for the Grain Industry;** there are also special requirements, for example, section 1910.22(a)(2) requires “every workroom” to be maintained in a “clean and, so far as possible, dry condition.” Section 1910.265(c)(18)(i) specifies preventive-maintenance procedures that apply to conveyors used in sawmills. Be sure to consult the equipment or vehicle manufacturer operations manual for specific preventative and corrective maintenance requirements.
- » **Review and implement the COA Preventative and Corrective Maintenance Standard Operating Procedure:** https://www.ksre.k-state.edu/agsafe/manuals_forms/Preventative%20Maintenance%20SOP.pdf; **Preventative Maintenance Log:** https://www.ksre.k-state.edu/agsafe/manuals_forms/Equipment%20Vehicle%20Maintenance%20Log.pdf
- » **Complete the HSI/VIVID Risk Management Basics: Preventative Maintenance.**
Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the HSI/VIVID system.
- » **Additional Resource:**
 - **Hazardous Occupations Safety Training in Agriculture:**
<https://ag-safety.extension.org/wp-content/uploads/2019/05/English-Task-Sheets-Group-3.pdf>
 - **Lab Equipment Maintenance 101:**
<https://www.mynewlab.com/blog/laboratory-equipment-maintenance-101/>

All department-specific training must be kept on file with the supervisor.

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Print Shop Safety

Print shops have many potential hazards that must be identified and controlled to keep employees safe. Print shops produce wastewater; cutting paper and using spray powders can result in combustible dust; inappropriate material handling of heavy boxes, machinery left unguarded, or employees not trained properly leads to the risk of serious injury.



» **Review OSHA Printing Industry:**

https://www.osha.gov/SLTC/printing_industry/safetyprograms.html

» **Review OSHA eTool Printing Industry:**

<https://www.osha.gov/SLTC/etools/printing/index.html>

» **Conduct Print Shop Inspection to identify and correct existing hazards:**

https://www.ksre.k-state.edu/agsafe/manuals_forms/General%20Departmental%20EHS%20Inspection%20Checklist.pdf

All department-specific training must be kept on file with the supervisor.

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Radiation/Laser Safety

Exposure to non-ionizing or ionizing radiation, if not properly controlled, places employees at risk of serious health hazards.



Ron Bridges, K-State Radiation Manager

» **Review KSU Radiation Safety Manual.**

https://www.k-state.edu/safety/docs/radiation_safety_manual.pdf

» **Complete the VIVID Online Introduction to Radiation Safety course.**

• *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Complete the Application for Authorization to Use Radioactive Materials at KSU (if applicable).**

<https://www.k-state.edu/safety/docs/radioactive-materials-app.pdf>

» **Complete the Personnel Radiation Monitoring Service Request (if applicable).**

<https://www.k-state.edu/safety/docs/radiation-monitoring-request.pdf>

» **Review the KSU Laser Safety Manual.**

https://www.k-state.edu/safety/docs/laser_safety_manual.pdf

» **Complete the VIVID Online Laser Safety Course.**

• *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Additional Resource:**

• **OSHA Radiation Overview.** *<https://www.osha.gov/SLTC/radiation/index.html>*

• **Radioactive Waste:** *<https://www.k-state.edu/safety/radiation/request.html>*

All department-specific training must be kept on file with the supervisor.

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Respiratory Protection

Respiratory protection must be provided to employees who are working in a hazardous atmosphere. The appropriate respirator will depend on the contaminants the employee will be exposed to.

- » **Review and follow the instructions in the KSU Respiratory Protection Program**, which serves as an essential element in identifying and managing respirable material risk to faculty, staff, and students.
<https://www.k-state.edu/safety/occupational/respiratory-protection/>
- » **Review the Respiratory Protection tutorial video** created to enhance your ability to achieve regulatory compliance, <https://youtu.be/TkXDB9137Us>.
 - Medical Services and Fit-testing are provided by Alliance Health Resources. To schedule an appointment, contact your department EHS Coordinator.



Rick Windholz, Hays

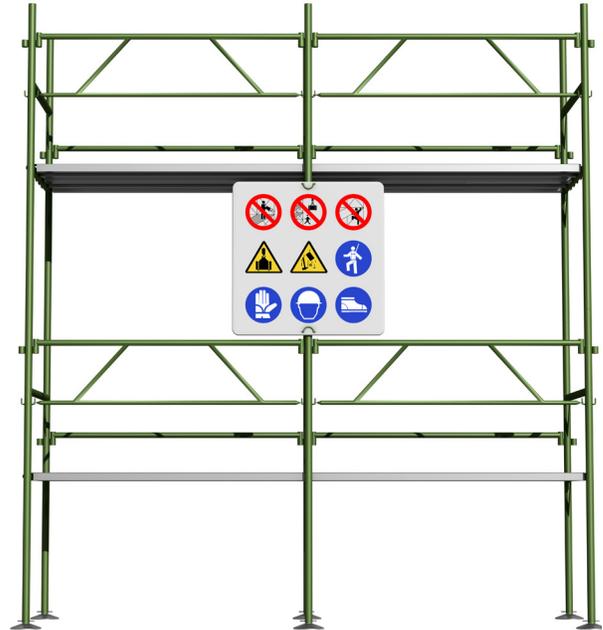
All department-specific training and forms must be kept on file with the supervisor.

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Scaffolding Safety

Employees using scaffolding are exposed to serious hazards, such as falls from elevations, being struck by falling objects, coming in contact with overhead power lines, and poorly installed equipment causing a collapse. Employees must be trained to identify these and other hazards and know who has the authority to take corrective measures.



» **Review OSHA 29 CFR 1926.451 Scaffolding General Requirements.**

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.451>

» **Complete the VIVID Online Scaffolding Safety course.**

• *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*

» **Complete Scaffolding Competent Person 8-hour live training course.**

• *Contact the COA EH&S Office for enrollment information.*

» **Complete the Scaffolding Inspection Daily Checklist.**

<https://www.mvhabitat.org/clientuploads/pdf/Safety/Scaffold%20Inspection%20Checklist.pdf>

» **Additional Resources:**

• **OSHA Supported Scaffolds: Framed or Fabricated.**

<https://www.osha.gov/SLTC/etools/scaffolding/supported/frame.html>

• **OSHA: A Guide to Scaffolding Use.**

<https://www.osha.gov/Publications/osha3150.pdf>

• **OSHA eTools General Requirements for Scaffolds.**

https://www.osha.gov/SLTC/etools/scaffolding/gen_req.html

All department-specific training must be kept on file with the supervisor.

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Shop Safety (Shop Signs)

Employees working in shops are exposed to a variety of hazards caused by poor housekeeping, damaged tools, unguarded equipment, and failure to wear appropriate personal protective equipment.



North Agronomy Farm, Manhattan

- » **Review the Farm Shop Safety Video (SAIF).**
<https://www.youtube.com/watch?v=05IWcbOn514>
- » **Review 29 CFR 1910.177 Servicing Multi-Piece and Single-Piece Rim Wheels** and the related publication.
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.177>
https://www.osha.gov/sites/default/files/2018-12/fy10_sh-20856-10_Abrasive_Wheel_Checklist.pdf
- » **Complete Shop Safety Quiz.** (Employee ID and password required.)
https://kstate.qualtrics.com/jfe/form/SV_bpvuZDfkFlbSJal
- » **OR, Complete the Vivid Online Shop Safety Course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Perform Periodic Shop Inspections** using the Farm Hazard Inspection Checklist.
https://www.ksre.k-state.edu/agsafe/manuals_forms/Farm%20Safety%20Inspection%20Checklist_12.03.15_R2.pdf
- » **Parts Washer Inspection Tool:** https://www.yakimacleanair.org/site/files/file_manager/page/shared/SolventDegreasersChecklist.pdf and safety procedure: http://www.toolboxtopics.com/Parts_Washing_Tanks--A_Safety_Checklist.htm
- » **Register and Post KSU SHOP Sign** using the template found at
<https://www.k-state.edu/safety/occupational/shopsign/>
- » **Additional Resource:**
 - **OSHA Self-Inspection Checklist**
<https://www.osha.gov/sites/default/files/publications/small-business.pdf>

All department-specific training must be kept on file with the supervisor.

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Skid Loader Safety

Employees are exposed to many hazards such as exhaust fumes, high-pressure oils, moving parts, and flammable and corrosive materials that can cause severe injuries if not controlled when operating a skid loader.



Ross Wahl, Manhattan

- » **Review OSHA Hazards Associated with Operating Skid Steer Loaders.**
<https://www.osha.gov/dts/shib/shib011209.html>
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ that includes a post-test. Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment's manufacturer operations manual and successfully complete the operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection. **Special note: This course ONLY reviews the certification process and resources. It DOES NOT certify the operator by taking this course.**
- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>. **Note: no employees under the age of 18 can run equipment.**
- » **Complete the CITI Skid Loader Training.**
https://www.ksre.k-state.edu/agsafe/training/CITI%20WPS%20Training%20Instructions_06.21.16.pdf
- » **Complete an Operator Performance Audit using this evaluation form.**
http://nasdonline.org/static_content/documents/1928/Eval_PerformanceChecklist_SkidSteerLoader.pdf
For evaluation performance criteria and course set-up, the following video is available to assist operators in the audit process and course set-up. <https://www.youtube.com/watch?v=KSZxFSN1ysg>. Operator performance audits need to be conducted every three years.
- » **Complete the Skid Loader Operator Pre-Use Inspection using the form below or an inspection form provided by the specific equipment manufacturer.**
<http://s7d2.scene7.com/is/content/Caterpillar/CM20180702-41597-22304>
- » **Additional Resource:**
 - **Preventing Injuries and Deaths from Skid-Steer Loaders — CDC.**
<https://www.cdc.gov/niosh/docs/2011-128/pdfs/2011-128.pdf>
 - **Skid Steer Loader Safety (MF2711)**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2711.pdf>
 - **Special Note:** If you are using the skid loader with forks you must also complete the Powered Industrial Truck Training in conjunction with the skid loader training.

All department-specific training must be kept on file with the supervisor.

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Spill Prevention, Control, and Countermeasure (SPCC) Program

Oil spills of any type are dangerous to public health, drinking water, and natural resources. Facilities that store oil in quantities specified by the EPA must have an SPCC plan. Employees must be trained and have the ability to respond effectively in an emergency.



Eric Adee, Topeka

- » **Review the EPA SPCC Regulation 40 CFR part 112, “A Facility Owner/Operator’s Guide to Oil Pollution Prevention.”**
<https://www.epa.gov/sites/production/files/documents/spccbluebroch.pdf>
- » **Contact the K-State Environmental Health and Safety Hazardous Waste Manager about questions involving your plan or if your facility needs a plan.** Follow EPA guidelines for plan changes and five-year renewal.
- » **Complete the VIVID Online Oil Spill, Control, and Countermeasures (SPCC) training.** Initial New Hire and Annual Training is required.
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Additional Resources:**
 - **EPA Oil Spill Prevention and Preparedness Regulations.**
<https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations>
 - **Spill Prevention, Control, and Countermeasure (SPCC) for Agriculture.** Note: K-State follows the original threshold of 1,320 gallons for facilities not the agriculture standard of 2,500 gallons.
<https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/spill-prevention-control-and-countermeasure-spcc>

All department-specific training must be kept on file with the supervisor.

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Supervisory Leadership Development/ Program Evaluation Tools

The Foundation of Safety Leadership defines a safety leader has the courage to demonstrate that s/he values safety by working and communicating with team members to identify and limit hazardous situations even in the presence of other job pressures, such as scheduling and costs. Safety leaders exist in all levels of the organization.



The Occupational Safety and Health at Kansas State University Policy states that any person of authority at the university is responsible for those employees under his or her supervision. This means the role of supervising is not title dependent. It can be any employee, including student employees, supervisors, managers, directors, faculty members, deans, or department heads. Basically, if you supervise employees at any level, you are responsible for occupational safety and health in your assigned area.

- » **Review the Occupational Health and Safety at KSU Policy (PPM 3720.010):** <https://www.k-state.edu/policies/ppm/3700/3720.html>
- » **View the COA Dean's Welcome Video:** <https://www.youtube.com/watch?v=jgQaWzwrM2A>
- » **Review the COA Dean's Letter of Commitment:** https://www.ksre.k-state.edu/agsafe/commitment/Statement%20of%20Commitment_updated%202021_signed.pdf
- » **Complete the COA Foundation of Safety Leadership course:** (eID and password required; contact your Department EHS Coordinator for assistance)
<https://www.ksre.k-state.edu/agsafe/training/specialized/fsl-final2/story.html>
- » **Supervisor Mandatory EHS Training Series:** Any employee in a supervisory role MUST COMPLETE the 3-Part Supervisor training that enables supervisors to create a proactive approach to health and safety management.
- » **Complete the EHS How it Works-Part One:** This course focuses on the supervisor's role and responsibility to create a successful safety culture. It provides supervisors with the resources to determine the OSHA core elements required for their areas, how to apply the elements, what safety training is needed, and what are the available resources to ensure their success.
Course Link: <https://www.ksre.k-state.edu/agsafe/training/specialized/ebshowitworkspartonefinal/story.html>

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Supervisory Leadership/Program Evaluation Tools, continued

- » **Complete the EHS How it Works-Part Two: The First Six:** This course focuses on OSHA safety program elements: Hazardous Communications, Emergency Response, Walking Working Surfaces, Machinery, Lockout Tagout, and Electrical. Each course will focus only on the key components in a format that will increase the supervisor's understanding. It is important to note that this training does not replace supervisor's responsibility to know and understand all elements as required by regulation as recorded in the College of Agriculture EHS Resource Guide.
Course Link: <https://www.ksre.k-state.edu/agsafe/training/specialized/ehshowitworksfirstsixfinal/story.html>
- » **Complete the EHS How it Works-Part Two: The Final Six:** This course focuses on OSHA safety program elements: Personal Protective Equipment, Ergonomics, Hazardous Material Management, Material Handling, Infectious Diseases to include Bloodborne Pathogens, and Introduction to Industrial Hygiene. Each course will focus only on the key components in a format that will increase the supervisor's understanding. It is important to note that this training does not replace supervisor responsibility to know and understand all elements as required by regulation as recorded in the College of Agriculture EHS Resource Guide.
Course Link: <https://www.ksre.k-state.edu/agsafe/training/specialized/ehshowitworksparttwofinalsix2/story.html>
- » **Complete the Introduction to Safety Management Course:** <https://www.oshatrain.org/courses/mods/700e.html> and complete the post-test link: https://kstate.qualtrics.com/jfe/form/SV_agd63x7z52X7v0M. It will automatically download into the KSU HRIS individual employee training database.
- » **Additional Resources**
 - **Foundations of Safety Leadership Resources:** <https://www.cpr.com/research/training-and-awareness-programs-from-research/foundations-for-safety-leadership/>
 - **OSHA Safety and Health Program Management Guide:**
https://www.osha.gov/sites/default/files/SHPM_guidelines.pdf
 - **OSHA Recommended Practices for Safety and Health Programs:**
<https://www.osha.gov/safety-management>
 - **OSHA Form 33 Program Evaluation Tool** (use this tool to evaluate departmental EHS program compliance): <https://www.kelleronline.com/pdf/Iforms/Form33.pdf> and use the tips for a guide to improve on areas identified as noncompliant:
https://www.dir.ca.gov/dosh/cal_vpp/form33_tip_sheet.pdf

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Tractor Safety

Employees operating tractors are exposed to serious hazards such as rollovers, run-overs, getting caught in moving parts, and collisions. Employees must develop safe work practices to prevent serious injury or death.



Hutchinson, Kansas

- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>. **Note: No employees under the age of 18 can run equipment.**
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ that includes a post-test. Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment's manufacturer operations manual and successfully complete the operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection. **Special note: This course ONLY reviews the certification process and resources. It DOES NOT certify the operator by taking this course.**
- » **Review the COA Tractor Operations Standard Operating Procedure (SOP).** https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Complete the all Tractor Operations training as specified in Appendix A in the SOP.**
- » **Complete Tractor Operators Performance Evaluations as specified in Appendix D in the SOP.**
- » **Complete Pre-Use Tractor Inspection Checklist using Appendix C in the SOP.**
 - **Tractor Operations SOP Link:** https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Complete the Tractor Safety quiz (from MF2708) in Qualtrics.** (Employee ID and password required). https://kstate.qualtrics.com/jfe/form/SV_8wgT5y5fXWWdodn
- » **Rollover Protection — must be conducted initially and annually. Complete the Rollover Protection interactive e-learning course at** <https://www.ksre.k-state.edu/agsafe/training/specialized/rollover/story.html> (To access this course you will need to contact your EHS Coordinator for the secured username and password.)
- » **Additional Resources:**
 - **Tractor Safety Basic Operation Part 1 Video.** <https://www.youtube.com/watch?v=VX6725s95p4>

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Tractor Safety, continued

- **Tractor Safety Basic Operation Part 2 Video.**
https://www.youtube.com/watch?v=FUmXNHU_z1Q&list=PLL-QLNcYL6hQ2CaGwiTmTiEkBUbvm7gev
- **OSHA Protecting Agriculture Workers from Tractor Hazards.**
<https://www.osha.gov/Publications/OSHA3835.pdf>
- **Tractor Safety (MF2708)**
<https://www.bookstore.ksre.ksu.edu/pubs/MF2708.pdf>

All department-specific training must be kept on file with the supervisor.

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Utility Vehicle Safety

Employee use of utility-type vehicles in agriculture is growing. Vehicle operators must be educated and responsible to incorporate safe work practices to prevent injuries from overturns, not wearing seat belts, riding in bed, operating on steep or uneven terrain, not keeping body parts inside the machine, and failure to inspect prior to use.



Leland and Jim Kimball, Ottawa

- » **Review KSU Industrial and Utility Mobile Vehicle Policy:** <https://www.k-state.edu/policies/ppm/3700/3720.html#utilitymobile>. **Note: no employees under the age of 18 can run equipment.**
- » **Supervisors complete the Farm and Heavy Equipment Operator Certification eLearning course:** https://rise.articulate.com/share/NbCuYI2Vak29ELQzdeTnp_uS9TOQc4kv#/ that includes a post-test. Employees must be an approved operator completing the appropriate training that includes a complete review of the specific equipment's manufacturer operations manual and successfully complete the operator performance audit conducted by an authorized trainer that includes how to conduct a pre-use inspection.
- » **Complete the In Control: ATV and Farm Utility Vehicle Safety Part 1.** <https://www.youtube.com/watch?v=f07Pkl14xqU>
- » **Complete the In Control: ATV and Farm Utility Vehicle Safety Part 2.** <https://www.youtube.com/watch?v=YUm9rwNU-GM>
- » **Complete the ATV Institute: ATV Online E-Course.** <https://cvt.svia.org/login/index.php>
- » **Complete the Utility Vehicle Safety quiz in Qualtrics.** (Employee ID and password required). https://kstate.qualtrics.com/jfe/form/SV_09eNQ0V8ccVBRBz
- » **Complete an Operator Performance Audit in accordance to the equipment manufacturer. If not available, use the Powered Mobile Equipment Evaluation Guide provided at this link:** https://www.ksre.k-state.edu/agsafe/manuals_forms/Powdered%20Mobile%20Equipment%20Performance%20Guide.pdf
- » **Complete a Pre-Use Inspection in accordance to the equipment manufacturer specifications in the operator's manual.**

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Utility Vehicle Safety, continued

» **Additional Resources:**

- **OSHA Hazards Associated with All-Terrain Vehicles (ATVs) in the Workplace.**
<https://www.osha.gov/sites/default/files/publications/OSHA3758.pdf>
- **CDC All-Terrain Vehicles (ATV) Safety at Work.**
<https://aghealth.nih.gov/participants/atv.insert.pdf>
- **SAIF Farm (ATV) Safety Video.**
<https://www.youtube.com/watch?v=XSDWmnmTtng>

All department-specific training must be kept on file with the supervisor.

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Walking and Working Surfaces

Employees accessing or working from any horizontal or vertical surface that is not properly maintained or constructed can suffer from sprains, strains, and broken bones. Falls from elevated platforms or open-sided floors can result in death. Employees must have knowledge of the hazards and control measures to prevent harm.



- » **Review OSHA CFR 1910.22 Walking-Working Surfaces General Requirements.**
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.22>
- » **Complete the VIVID Online Slips, Trips, and Falls course.**
 - *Contact your departmental safety coordinator or COA EH&S office for enrollment assistance with the VIVID system.*
- » **Additional Resources:**
 - **National Grain Federation Association Walking Working Surfaces Guidance Document (May 2018).**
https://drive.google.com/file/d/1vyb1rLtImf6_O1L9P0yczi8UGnEWReEP/view
 - **OSHA Final Rule Fact Sheet General Industry Walking Working Surfaces.**
<https://www.osha.gov/Publications/OSHA3903.pdf>
 - **Walking Working Surfaces and Personal Fall Protection Final Rule Frequently Asked Questions.**
<https://www.osha.gov/walking-working-surfaces/faq.html>

All department-specific training must be kept on file with the supervisor.

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Worker Protection Standard

EPA's Agriculture Worker Protection Standard (WPS) is aimed at reducing the risk of pesticide poisoning and injury among agricultural workers and pesticide handlers.



- » **Review EPA Pesticide How to Comply Manual**, which serves as an essential document in identifying and managing risk to staff associated with pesticide use: <https://www.epa.gov/pesticide-worker-safety/pesticide-worker-protection-standard-how-comply-manual>. In addition, EPA provides a WPS Inspection Manual: <https://www.epa.gov/sites/default/files/2013-09/documents/wpinspectionguide.pdf>
- » **Special Note: Only Approved Trainers can administer the WPS Worker or Handler Courses.** Refer to the WPS Train the Trainer Orientation Course. In addition, all supervisors handling pesticides in their assigned area must complete the WPS Supervisor Orientation course.
- » **Complete the WPS Train the Trainer Orientation eLearning Course:** <https://www.ksre.k-state.edu/agsafe/training/specialized/wpstrainer2023final/story.html>
- » **Complete the WPS Supervisor Orientation eLearning Course:** <https://www.ksre.k-state.edu/agsafe/training/specialized/wpssupervisor2023/story.html>
- » **Complete the WPS Worker Course:** <https://www.ksre.k-state.edu/agsafe/training/specialized/wpworker/story.html>. At the end of the course will automatically download into the KSU HRIS Employee Training database.
- » **Complete the WPS Handler Course:** <https://www.ksre.k-state.edu/agsafe/training/specialized/wpshandler/story.html>. At the end of the course will automatically download into the KSU HRIS Employee Training database.
- » **Complete Departmental WPS Hands-on Training:** https://www.ksre.k-state.edu/agsafe/manuals_forms/index.html
- » **Evaluate Your WPS Program using EPA Checklist:** <https://www.epa.gov/sites/production/files/2018-08/documents/wpinspectionchecklists.pdf>.
- » **Additional Resources:** WPS Greenhouse resources are **supplemental training only** and do not take the place of taking the Worker or Handler training. Employees must be trained as a Worker or a Handler.
 - **WPS: Greenhouse/Nursery Application Pesticide Handler from OSU:** <https://agsafety.osu.edu/sites/agsafety/files/imce/WPS%20Handler%20Greenhouse%202018.pdf>.

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Worker Protection Standard, continued

- **WPS: Greenhouse/Nursery Application Pesticide Workers from OSU:** <https://agsafety.osu.edu/sites/agsafety/files/imce/WPS%20Worker%20Greenhouse%202018.pdf>.
- **2017 Updated WPS Poster for Central Posting:** https://agsafety.osu.edu/sites/agsafety/files/imce/PERC_CP_22x34_english.pdf.
- **EPA Greenhouse Worker Video** (please note you must still take either the Worker or Handler training listed above): <https://www.youtube.com/watch?v=WK7XnWsIkwQ>
- **Reading a Pesticide Label** (MF3071): <https://www.bookstore.ksre.ksu.edu/pubs/MF3071.pdf>.
- **EPA My Responsibilities for Indoor Fumigant Application:** <https://www.pesticideresources.org/wps-resources/what-are-my-responsibilities-for-indoor-fumigant-applications/>
- **EPA Soil Fumigants Safety Measures:**
<https://www.epa.gov/soil-fumigants/implementing-safety-measures>
- **EPA Soil Fumigant Training Certified Applicators:**
<https://www.epa.gov/soil-fumigants/soil-fumigant-training-certified-applicators>

Employees completing the Certified Training Institute courses and have successfully completed the corresponding Qualtrics quiz will be issued a certificate of completion from the approved trainer that is valid one year from the training completion date. Annual retraining is required. Note: EPA cards are no longer issued.

Special Note: Employees seeking to be a Certified Commercial Chemical Applicator can find online resources at: <https://www.ksre.k-state.edu/pesticides-ipm/commercial-applicator.html> or order from the KSRE bookstore. The order form for manuals is located at this same site.

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Additional Safety-Related Publications from K-State Research and Extension:

Originally for the landscaping and horticultural services and fruit and vegetable industries, these publications are applicable in a variety of settings. Many of these are also available in Spanish (add S to the publication number when you search).

MF2708, Tractor Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2708.pdf>

MF2709, Motor Vehicle Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2709.pdf>

MF2710, Chipper/Shredder Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2710.pdf>

MF2711, Skid Steer Loader Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2711.pdf>

MF2712, Tree Trimming Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2712.pdf>

MF2713, Aerial Lift Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2713.pdf>

MF2714, Mowing and Trimming Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2714.pdf>

MF2715, Guide to Managing Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2715.pdf>

MF2716, Instructor Guide for the Landscaping and Horticultural Services Industry,
<https://www.bookstore.ksre.k-state.edu/pubs/MF2716.pdf>

MF2766, Back Injury Prevention for the Landscaping and Horticultural Services Industry,
<https://www.bookstore.ksre.k-state.edu/pubs/MF2766.pdf>

MF2758, Machine Hazards, <https://www.bookstore.ksre.k-state.edu/pubs/MF2758.pdf>

MF2759, Lift Truck Safety, <https://www.bookstore.ksre.k-state.edu/pubs/MF2759.pdf>

MF2760, Working Safely Around Hazardous Substances,
<https://www.bookstore.ksre.k-state.edu/pubs/MF2760.pdf>

MF2761, Fall Prevention, <https://www.bookstore.ksre.k-state.edu/pubs/MF2761.pdf>

MF2762, Back Injury Prevention for the Fruit and Vegetable Preserving Industry,
<https://www.bookstore.ksre.k-state.edu/pubs/MF2762.pdf>

MF2763, Guide to Managing Safety for Employers and Supervisors in the Fruit and Vegetable Preserving and Specialty Foods Manufacturing Industry,
<https://www.bookstore.ksre.k-state.edu/pubs/MF2763.pdf>

MF2764, Instructor Guide for the Fruit and Vegetable Preserving and Specialty Foods Manufacturing Industry, <https://www.bookstore.ksre.k-state.edu/pubs/MF2764.pdf>

Advanced Methods of Dust Control,
<https://www.osha.gov/harwoodgrants/grantmaterials/fy2013/sh-24936-sh3>

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IMPLEMENTING a safety & health program



can help employers avoid the



INDIRECT COSTS
that result
from

WORKPLACE INCIDENTS

such as



These **INDIRECT COSTS** have been estimated to be at least

2.7
times the
DIRECT COSTS



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